SLIC # 0744

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30 November 2000

Mr. Steven Hariri
Site Cleanup Unit
California Regional Water Quality Control Board
Los Angeles Region
320 4th Street, Suite 200
Los Angeles, CA 90013

Subject: Report on Site Conditions, Local Hydrogeology, and Offsite Groundwater Production and Work Plan for Groundwater Remediation for the Jervis B. Webb Company of California Property, 5030 Firestone Boulevard, South Gate, California (RWQCB SLIC File No. 744; EKI 991103.01)

Dear Mr. Hariri:

On behalf of Jervis B. Webb Company of California ("Webb"), Erler & Kalinowski, Inc. is pleased to present the enclosed *Report on Site Conditions, Local Hydrogeology, and Offsite Groundwater Production and Work Plan for Groundwater Remediation*, dated 30 November 2000. This document was prepared in response to requests presented by the California Regional Water Quality Control Board, Los Angeles Region in its letter to Webb dated 18 September 2000. At this time, Webb believes that subsurface characterization and soil remediation activities at its South Gate property are sufficiently complete to allow the initiation of remedial measures for groundwater. The attached document summarizes site conditions, describes local hydrogeology, identifies bodies of surface water and groundwater production wells within a one-mile radius of the site, and presents a work plan for implementation of air sparging for enhanced recovery of volatile organic compounds from groundwater beneath the Webb property in South Gate.

Please contact us if you have any comments or questions.

Very truly yours,
ERLER & KALINOWSKI, INC.

FOR

Steven R. Chambers, Ph.D.
Project Manager

REGISTERED PROFESSIONAL ENGINEER
STEVEN G. MILLER
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Steven G. Miller, P.E.
Project Engineer

cc: Mr. Michael Farley, Esq., Jervis B. Webb Company

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Report on Site Conditions, Local Hydrogeology, and Offsite Groundwater Production and Work Plan for Groundwater Remediation

Jervis B. Webb Company of California
5030 Firestone Boulevard, South Gate, California
(EKI 991103.02)

30 November 2000

Submitted to:

California Regional Water Quality Control Board
Los Angeles Region

Erler & Kalinowski, Inc.

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Report on Site Conditions, Local Hydrogeology, and Offsite Water Production and Work Plan for Groundwater Remediation

Jervis B. Webb Company of California
5030 Firestone Boulevard, South Gate, California

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Report on Site Conditions, Local Hydrogeology, and Offsite Water Production and Work Plan for Groundwater Remediation
Jervis B. Webb Company of California
5030 Firestone Boulevard, South Gate, California

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APPENDICES

1. INTRODUCTION

Erler & Kalinowski, Inc. ("EKI") is pleased to present this *Report on Site Conditions, Local Hydrogeology, and Offsite Groundwater Production and Work Plan for Groundwater Remediation* for the properties located at 5030 Firestone Boulevard and 9301 Rayo Avenue in South Gate, California (collectively referred to as the "Site," see Figure 1). This document was prepared on behalf of the Jervis B. Webb Company of California ("Webb"). The property located at 5030 Firestone Boulevard ("Firestone Property") is owned by Webb. Webb sold the adjacent property at 9301 Rayo Avenue ("Rayo Property") to Reliable Steel Building Products, Inc. ("Reliable Steel") in 1997.

This document was prepared in response to requests presented by the California Regional Water Quality Control Board, Los Angeles Region ("RWQCB") in its letter to Webb dated 18 September 2000. In its letter, the RWQCB requested that Webb submit a work plan for additional groundwater investigation at the Site, and submit information regarding drinking water aquifers, groundwater production wells, and bodies of surface water within a one-mile radius of the Site. At this time, Webb believes that subsurface characterization and soil remediation activities at the Site are sufficiently complete to allow the initiation of remedial measures for groundwater. The remainder of this document summarizes Site conditions, describes local hydrogeology, identifies bodies of surface water and groundwater production wells within a one-mile radius of the Site, and presents a work plan for implementation of air sparging for enhanced recovery of volatile organic compounds ("VOCs") from groundwater beneath the Site.

2. REPORT ON SITE CONDITIONS, LOCAL HYDROGEOLOGY, AND OFFSITE GROUNDWATER PRODUCTION

2.1. Site Conditions

2.1.1. Location and Size of Site

The Site is approximately 4.2 acres in size and is located at 5030 Firestone Boulevard and 9301 Rayo Avenue in South Gate, California (see Figures 1 and 2). The Rayo Property occupies roughly 2.8 acres and the Firestone Property occupies roughly 1.4 acres. The Site is bounded to the north by Firestone Boulevard. To the east and southeast are commercial/industrial properties. To the south and southeast is Rayo Avenue. Along the west side of the Site are tracks of the Union Pacific Railroad. An easement containing a large underground storm drain also is located along the western portion of the Site.

2.1.2. Site Features

A steel-framed building with corrugated steel siding is present on the Firestone Property. The building occupies roughly 20,000 square feet (Figure 2). The area around the building is covered with asphalt or concrete except for a planted area at the north end of the building. A railroad spur passes through the west side of the parcel toward the Rayo Property. A large underground storm drain passes through the Site approximately parallel to the western property line and extends to the southeast. A utility line, which may be a sanitary sewer pipeline, crosses the eastern side of the Firestone Property and the Rayo Property, where it apparently discharges to a sewer line in Rayo Avenue.

A steel-framed building with corrugated steel siding currently occupies the Rayo Property (Figure 2). The building has an approximate area of 37,000 square feet. At the north end of the building is a steel-framed roof-covered open bay over an area of approximately 10,000 square feet. The remainder of the property is mostly covered with asphalt or concrete. Some landscaped areas are located on the southeastern portion of the property. An inactive railroad spur enters the property from the northwest through the Firestone Property. Electrical power and water supply appear to be provided from Rayo Avenue.

2.1.3. Site History

Webb manufactured conveyor systems at the Rayo Property from the mid-1950s to early 1996. Webb acquired the Firestone Property in the 1960s. Blake Rivet ("Blake") manufactured aircraft rivets at Firestone Property through the 1970s. Blake's manufacturing

plant included an aboveground anodizing operation. Wastewater from this operation was collected in floor trenches and processed through a three-stage clarifier located at the southeast corner of the building on the Firestone Property. The clarifier discharged to the local sanitary sewer. After the departure of Blake in 1980, Webb primarily used the Firestone Property for storage of metal stock that was needed for the manufacture of industrial conveyor systems at Webb's manufacturing plant on the Rayo Property. Reliable Steel purchased the Rayo Property in 1997, and currently leases the Firestone Property from Webb for storage of metal stock.

2.1.4. Historical Investigations at the Site

The principal environmental activities conducted at the Site are briefly summarized below.

Phase I Environmental Site Assessment ("ESA") Report (EKI, 20 June 1996). The significant findings of the Phase I ESA included the identification of 1) a below-grade concrete containment structure and an open-bottomed sump in the building on the Rayo Property, 2) a concrete clarifier located outside the southern wall of the building on the Firestone Property, and 3) a groundwater monitoring well owned by the Dial Corporation, located along Rayo Avenue and adjacent to the Rayo Property, that had produced samples of groundwater in which trichloroethene ("TCE") had been detected (EMCON, 18 July 1995). In addition, it was found that the Site was listed on the U.S. Environmental Protection Agency's ("EPA's") CERCLIS list of potentially contaminated sites. The U.S. EPA had conducted a Preliminary Assessment/Site Inspection of the Site and several other industrial properties in the area. These assessments apparently were conducted as a consequence of the detection of tetrachloroethene ("PCE") and TCE in samples of deep groundwater collected from City of South Gate wells located one-quarter to one-half mile southwest and southeast of the Site.

Report on Closure of Two Tanks at the Jervis B. Webb Company Facility, 9301 Rayo Avenue, South Gate, California, (EKI, 10 December 1996). The below-grade concrete containment structure and the open-bottomed sump identified in the building on the Rayo Property during the Phase I ESA were removed from the Site during November 1996. Chemical analyses of samples of soil collected from the excavations beneath the removed structures did not detect elevated concentrations of petroleum hydrocarbon compounds, VOCs or metals. A closure letter for removal of the two structures was received from the County of Los Angeles Department of Public Works.

As requested by Webb, EKI contacted the U.S. EPA and provided the tank closure and related investigation information. The U.S. EPA concluded that no further investigation was needed on the Rayo Property but further investigation of the Firestone Property was required before the Site could be removed from the active CERCLIS list. Subsequently, the Rayo Property was sold to Reliable Steel and Webb initiated investigations at the Firestone Property.

Phase II Soil Investigation Report for the Jervis B. Webb Company Property at 5030 Firestone Boulevard in South Gate, California (EKI, 18 February 1998). In October 1997, 14 soil borings were completed at the Firestone Property. Samples of soil were collected to maximum depths ranging from approximately 10 to 20 feet below ground surface ("ft bgs"). Samples of soil were analyzed for pH, petroleum hydrocarbon compounds, trace metals, and VOCs. Soil pH, petroleum hydrocarbons, and trace metals were not detected at concentrations of concern. PCE and TCE were detected in most of the soil samples that were analyzed. The highest concentrations of PCE and TCE were detected in a sample of soil collected from approximately 20 ft bgs beneath the clarifier near the southeast corner of the building on the Firestone Property. No other VOCs were detected.

During December 1997, a soil gas survey was completed at the Firestone Property. TCE and PCE were the primary chemicals of concern detected in the samples of soil gas collected at the Site. Chloroform, 1,1,1-trichloroethane ("1,1,1-TCA"), dichlorodifluoromethane ("Freon-12"), and trichlorofluoromethane ("Freon-11") also were detected at low concentrations.

Also in December 1997, five deep soil borings were drilled at the Firestone Property to estimate the vertical extent of VOC occurrence in unsaturated soil beneath the clarifier and the adjacent former anodizing area inside the building. Soil borings were completed to maximum depths ranging from 46.5 to 62.5 ft bgs. TCE and PCE were detected in each sample of soil collected from these soil borings.

Based on the results of these investigations, Webb requested that the RWQCB assume lead regulatory oversight of investigations and potential remedial actions at the Site.

Tables and maps summarizing the results of the Phase II soil investigation at the Site are provided in Appendix A.

Phase II Groundwater Investigation Report for the Jervis B. Webb Company Property at 5030 Firestone Boulevard in South Gate, California (EKI, 30 June 1998). In a meeting with the representatives of Webb on 6 February 1998, staff of the RWQCB indicated that sampling and analysis of groundwater would be required at both onsite and offsite locations. Three groundwater monitoring wells were installed at the Firestone Property. Samples of groundwater were collected from the three onsite wells in March and May 1998. As required by the RWQCB, samples of groundwater also were collected from two offsite groundwater monitoring wells owned by the Dial Corporation, located south of the Site in the right-of-way of Rayo Avenue.

TCE was the predominant VOC detected in each sample of groundwater. The maximum concentrations of TCE detected in the samples of groundwater collected from the onsite monitoring wells were higher that the concentrations of TCE detected in the samples of

groundwater collected from the offsite monitoring wells owned by Dial Corporation. In addition, cis-1,2-dichloroethene ("cis-1,2-DCE"), trans-1,2-dichloroethene ("trans-1,2-DCE"), 1,1- dichloroethene ("1,1-DCE"), 1,1-dichloroethane ("1,1-DCA"), and toluene were detected at low concentrations in some samples of groundwater collected from the onsite wells. As inferred from groundwater elevation data, the direction of groundwater flow in the groundwater table aquifer beneath the Site appeared to be primarily toward the south-southeast (see Figure 2).

The elevated concentrations of TCE and PCE detected in samples of soil and groundwater collected near the clarifier and former anodizing areas of the Firestone Property suggest that these chemicals may have been released on this portion of the Site. However, the elevated concentrations of TCE detected in samples of groundwater collected from monitoring well MW-2 and the location of this well on the inferred upgradient portion of the Site suggest that additional offsite sources of TCE may exist to the north of the Site (see Figure 2).

The results of depth to groundwater monitoring and chemical analyses of samples of groundwater collected at the Site are provided in Appendix B.

Additional Groundwater Investigation and Quarterly Monitoring Report for October to December 1998 related to the Jervis B. Webb Company Property at 5030 Firestone Boulevard in South Gate, California (EKI, 13 January 1999). The objective of this investigation was to obtain data to delineate the lateral extent of VOCs detected in groundwater beneath the Site. These investigations were performed during October and November 1998.

Nine groundwater samples were collected at a depth of 55 ft bgs via Push-In PVC Piezometer ("PIPP"; see Appendix C). The concentrations of TCE detected in the samples of groundwater were higher than concentrations of the other detected VOCs. The highest concentrations of TCE were detected in samples of groundwater collected near the clarifier and building on the Firestone Property. Other VOCs detected at low concentrations in the samples of groundwater included PCE, cis-1,2-DCE, trans-1,2-DCE, 1,1-DCA, 1,2-dichloroethane ("1,2-DCA"), 1,1-DCE, acetone, benzene, xylenes, toluene, and methyl ethyl ketone ("MEK"). One additional groundwater sample was collected near the southern edge of the Site at a depth of 95 ft bgs. TCE was not detected above the method detection limit in the sample of groundwater collected at this depth. The analytical results for the samples of groundwater collected during this investigation indicated that the downgradient extent of VOCs dissolved in groundwater had been adequately defined at the Site.

Workplan for Clarifier Removal and Soil Remediation by Soil Vapor Extraction, (EKI, 14 April 1999). A work plan for removal of the clarifier at the Firestone Property and installation of a soil vapor extraction ("SVE") system to remove VOCs from vadose zone soil at the Site was presented to the RWQCB. In a letter dated 18 May 1999, the RWQCB

approved the work plan. In its letter, the RWQCB also required Webb to conduct quarterly groundwater monitoring at the Site.

Quarterly Progress Reports for January 1999 through September 2000 (EKI, 4 June1999; EKI, 30 July 1999; EKI, 13 October 1999; EKI, 4 February 2000; EKI, 27 April 2000; EKI, 16 August 2000; EKI, 26 October 2000). Quarterly groundwater monitoring at the Site began in March 1998 (see Appendix B). The estimated direction of groundwater flow beneath the Site has been consistently toward the south-southeast (see Figure 2). The concentrations of VOCs detected in the samples of groundwater collected from monitoring wells on the Firestone Property were consistent during the first year of monitoring, but decreased during the second and third quarters of 2000.

Removal of the clarifier on the Firestone Property was completed in June 1999. The excavated area was filled with 47 cubic yards of imported sand. The excavated soil was disposed offsite during October 1999. Also in June 1999, eight soil vapor wells were installed at the Site in accordance with the work plan approved by the RWQCB (see Figure 3).

Soil vapor extraction began at the Site on 16 March 2000. As of 28 September 2000, an estimated 124 pounds of VOCs, including approximately 104 pounds of TCE, have been extracted from soil at the Site. Concentrations of VOCs detected in soil vapor samples collected from the Site indicate that VOC concentrations have decreased significantly at most of the SVE wells, and that closure of the soil remediation activities appears likely by the end of 2000.

2.1.5. Summary of Soil Data

During the Phase II soil investigation in 1997, samples of soil were collected from 19 soil borings at the Site for lithologic and chemical analyses (EKI, 18 February 1998; see Appendix A). Additional samples of soil were collected during the installation of groundwater monitoring wells in 1998 (EKI, 30 June 1998, 13 January 1999). The locations of soil borings and a geologic cross section of the Site are provided in Appendix D. Cone penetrometer tests ("CPT") were also conducted at the Site during October 1998 (see Appendix C and EKI, 13 January 1999). The maximum depth of investigation at the Site was 90 ft bgs. A clay layer about one to five feet thick was encountered at approximately 25 ft bgs. The groundwater table beneath the Site was encountered at approximately 45 ft bgs. The unsaturated soil above the clay layer is referred to herein as the shallow vadose zone, and the unsaturated soil beneath the clay layer is referred to herein as the deep vadose zone.

The shallow vadose zone has two distinct soil units, including a silty-sand zone extending from near ground surface to approximately 10 feet bgs, and a sandy-silt/clayey-silt zone extending from approximately 10 feet to 25 feet bgs. The highest concentrations of VOCs detected in soil at the Site have been in soil samples collected from the sandy-silt/clayey-silt

zone, i.e., at 20 feet bgs near the former clarifier on the Firestone Property. The deep vadose zone includes unsaturated soil beneath the clay layer found at approximately 25 feet bgs and above the groundwater table at approximately 45 feet bgs. In the middle of this zone is a one to five foot thick sand zone, overlain and underlain by lower permeability silty-sand and sandy-silt zones. Saturated sediments beneath the Site grade from sandy silts near the groundwater table to predominantly sandy sediments below 60 ft bgs (see Appendix D).

Prior to the initiation of SVE at the Site, TCE and PCE were detected at concentrations above 10 milligrams per kilogram ("mg/kg") in only one soil sample collected at the Site (i.e., 270 mg/kg of TCE and 140 mg/kg of PCE were detected in a soil sample collected at 20.5 ft bgs in soil boring B4; see Appendices A and D). This sample of soil was collected beneath the former clarifier at the Firestone Property, a suspected historical release point for VOCs at the Site.

In the shallow vadose zone (i.e., above 25 ft bgs), TCE and PCE were detected above 1 mg/kg only in samples of soil collected from soil borings B4 and B19. Soil borings B4 and B19 were located within a few feet of each other near the location of the former clarifier on the Firestone Property (see Appendices A and D). These data suggest that shallow soil with elevated concentrations of VOCs had a limited lateral extent prior to initiation of SVE.

In the deep vadose zone (i.e., below 25 ft bgs), TCE appears to have been more broadly distributed in soil, but at lower concentrations than those detected in soil samples from the shallow vadose zone. TCE was detected at concentrations above one mg/kg in samples of deep vadose zone soil collected from soil borings B15, B17, B18, and B19 (see Appendices A and D). The highest concentration of TCE detected in soil samples collected from the deep vadose zone was 8.7 mg/kg in a sample of soil collected at 45 ft bgs in soil boring B18. The broader distribution of TCE in the deep vadose zone suggests that some of the TCE may have migrated through groundwater and/or through the vapor phase to soil that was not directly impacted by a surface release of TCE.

2.1.6. Summary of Soil Gas Data

Prior to the installation and start up of the SVE system, a soil gas survey was performed at the Site during December 1997 (EKI, 18 February 1998). The objective of the soil gas survey was to provide additional subsurface data to identify potential source areas for the VOCs detected in samples of soil collected during the October 1997 investigation. Samples of soil gas were collected from 37 separate locations at a depth of approximately 5 ft bgs and analyzed for VOCs consistent with RWQCB guidance.

The analytical data from the soil gas survey indicated that TCE and PCE were the primary chemicals of concern in shallow soil at the Site. The area of the Site where TCE was detected in soil gas was centered near the location of the former clarifier on the Firestone Property. TCE was detected at concentrations ranging from 0.074 micrograms per liter

("ug/L") to 25 ug/L. PCE was detected at concentrations ranging from 0.021 ug/L to 28 ug/L. 1,1,1-TCA was detected at low concentrations (maximum concentration of 0.89 ug/L) in approximately half of the soil gas samples. Chloroform, Freon-12, and Freon-11 also were detected at low concentrations in a few samples of soil gas.

Although TCE and PCE were detected at concentrations above 10 ug/L in samples of soil gas collected beneath and adjacent to the building on the Firestone Property, TCE and PCE were not detected at concentrations above one mg/kg in samples of shallow vadose zone soil collected in these areas. This suggests that the TCE and PCE detected in soil gas beneath the building may have migrated laterally from the suspected release area near the former clarifier adjacent to the building. Such vapor migration would most likely have occurred in the relatively permeable silty-sand zone immediately underlying the building. Alternatively, the TCE and PCE detected in soil gas may have been the result of vertical migration of vapor from underlying soil that containing elevated concentrations of TCE and PCE.

2.1.7. Summary of Operational Results for Soil Vapor Extraction

The SVE system at the Site began operating on 16 March 2000 (EKI, 26 October 2000). As of 28 September 2000, it was estimated that 124 pounds of VOCs, including approximately 104 pounds of TCE, had been extracted from soil at the Site. Soil vapor extraction initially occurred from shallow vadose zone wells SVE-1, SVE-2, and SVE-3 and from deep vadose zone well SVE-D1 (see Figure 3). Deep vadose zone vapor monitoring probes VMP-D1 and VMP-D2 were converted to soil vapor extraction wells on 6 July 2000. From the time of system startup through 14 September 2000, the concentrations of TCE detected in samples of soil vapor collected from extraction well SVE-1 decreased from 10,000 parts per million by volume ("ppmv") to 300 ppmv. At the adjacent deep vadose zone well SVE-D1, the concentrations of TCE detected in samples of soil vapor decreased from 1,000 ppmv to 4 ppmv over the same time period. The concentrations of TCE detected in samples of soil vapor collected at system startup were lower at the other extraction wells and vapor monitoring probes, but the concentrations of TCE detected in samples of soil vapor have decreased during SVE operation at all well locations except extraction well SVE-2. The concentrations of TCE detected in samples of soil vapor collected from extraction well SVE-2 have remained relatively low (approximately 100 ppmv) and stable throughout operation of the SVE system.

Comparison of the daily mass removal rates for the SVE system that were estimated using data collected on 13 July 2000 and 14 September 2000 indicates that the VOC mass removal rate decreased about 70 percent between these dates (EKI, 26 October 2000). Given the large decrease in the mass removal rates, it is anticipated that the proposed closure criteria for the SVE system will be achieved during the fourth quarter of 2000 (closure criteria were presented in EKI, 26 October 2000). When it appears that appropriate closure criteria have been met, Webb intends to request that the RWQCB prepare a letter stating that no further actions are necessary for remediation of soil at the Site.

2.1.8. Summary of Recent Groundwater Data

Based on groundwater monitoring data collected at the Site from February 1998 through October 2000, the primary direction of groundwater flow beneath the Site is toward the south-southeast (see Figure 2). On 26 October 2000, the gradient of the groundwater table beneath the Site from monitoring wells MW-2 to MW-4 was approximately 0.005 feet/feet. From February 1998 through October 2000, the depth to groundwater in monitoring wells at the Site has ranged from approximately 42.5 to 45.5 ft bgs (see Appendix B).

Trichloroethene and cis-1,2-dichloroethene were the only VOCs detected in the samples of groundwater collected during the most recent monitoring event at the Site on 7 September 2000 (see Appendix B). Consistent with the results of previous groundwater monitoring at the Site, TCE was the chemical of concern detected with the greatest frequency (four of five wells) and at the highest concentration (21,000 ug/L in well MW-1). The concentrations of TCE detected in samples of groundwater collected from monitoring wells MW-2 through MW-5 ranged from non detect (MW-4; method detection limit of 0.5 ug/L) to 3,700 ug/L (MW-5). However, the concentrations of TCE and c-1,2-DCE detected in samples of the groundwater collected from each of the monitoring wells at the Site have decreased during each of the last two quarters (see the analytical results for samples of groundwater collected from March through September 2000 in Appendix B). This decrease in the concentrations of TCE and c-1,2-DCE detected in samples of groundwater coincides with the period of operation of the SVE system at the Site. The concentrations of TCE and c-1,2-DCE detected in samples of groundwater at the Site on 7 September 2000 are the lowest concentrations reported since groundwater monitoring began in March 1998. Samples of groundwater collected from downgradient monitoring well MW-4 have been non-detect for all VOCs during the last two quarters.

Historical groundwater monitoring data for the Site suggest that: 1) upgradient sources of TCE, and perhaps other VOCs, may have impacted groundwater beneath the Site (see the analytical data for monitoring well MW-2) and 2) monitoring well MW-4 has adequately defined the downgradient extent of VOC-impacted groundwater beneath the Site. In addition, the decrease in the concentrations of TCE and c-1,2-DCE detected in samples of groundwater collected at the Site from March through September 2000 may be a result of the operation of the SVE system at the Site. As discussed further in Section 3, Webb proposes to augment the removal of VOCs from groundwater beneath the Site by installing an air sparging well and initiating soil vapor extraction at groundwater monitoring well MW-1.

2.2. Local Hydrogeology

2.2.1. Hydrogeological Setting

The Site is located within the Southgate-Santa Ana Depression of the Downey Plain physiographic province, an alluvial depositional feature primarily composed of Quaternary sediments (California Department of Water Resources or "DWR", 1961). The Downey Plain extends across the central lowland areas of the Central Basin of the Coastal Plain of Los Angeles County. Depositional materials associated with this physiographic feature were deposited by the Los Angeles, Rio Hondo, and San Gabriel River systems. These alluvial systems have formed a very gentle plain. However, during past flooding events, these rivers systems have produced some erosional terraces and deposited debris over most of the area. The materials associated with the Downey Plain are also referred to as Recent Alluvium. Little deformation of the Recent alluvial sediments has occurred except where they cross tectonically active areas (DWR, 1961).

The Site is located along the northern axis of the Paramount Syncline, a depressional deformation feature trending northwest-southeast in the vicinity of the Site. This structure was formed by the Early Pleistocene deformation of the Central Basin. The trough-shaped geometry of this structure has produced folding of Early Pleistocene sediments of the Lakewood and San Pedro Formations. According to DWR (1961), no displacement of these sediments is apparent in the vicinity of the Site.

The Site is located in the Central Basin Pressure Area of the Central Basin of the Coastal Plain of Los Angeles County (DWR, 1964). The elevation of the ground surface at the Site is about 110 feet above mean sea level ("ft msl"). The surface topography appears to slope gently to the southeast in the general direction of the Los Angeles River (see Figure 1).

The Los Angeles River and the Rio Hondo River appear to be the only bodies of surface water located within one mile of the Site (see Figure 1). The Los Angeles River is located approximately 1,400 feet east of the Site. The Rio Hondo River is also located approximately 4,500 feet southeast of the Site.

2.2.2. Regional Groundwater Occurrence

The water-bearing sediments in the vicinity of the Site are unconsolidated and semi-consolidated marine and non-marine alluvial deposits of Recent to Pliocene age (DWR, 1961). The grain sizes of the sediments grade from course gravel and boulders to clay. Several major aquifers and confining layers comprise the freshwater-bearing zones utilized for groundwater production. The occurrence of groundwater within the alluvial sediments of the Coastal Plain of Los Angeles County has generally been categorized into three zones, which in downward succession are: 1) a zone of semiperched water that is present in the unconfined upper portion of the shallow, alluvial deposits of the Downey Plain and Torrance

Plain; 2) the principal body of fresh groundwater that occurs primarily in Recent and Pleistocene age sediments, and possibly underlying Pliocene rocks; and 3) saline water underlying the zone of the principal, freshwater-bearing sediments.

In the Central Basin Pressure Area, aquifers are separated by several distinct confining layers (DWR, 1961). The Bellflower Aquiclude, which is the only confining layer within the principal freshwater-bearing sediments that has been named, is comprised of Recent Alluvium. Significant, unnamed confining layers are also present between aquifers of the Lakewood and San Pedro Formations. The confining layers vary in extent and thickness throughout the Central Basin Pressure Area and their effectiveness as confining units between aquifers also varies. Pressure gradients created by groundwater production within major aquifers may result in the exchange of water between aquifers.

2.2.3. Description of Regional Hydrostratigraphic Units

The Site and nearby areas are underlain by several major hydrostratigraphic units that occur within three geologic formations: the Recent Alluvium, Lakewood Formation and San Pedro Formation. Aquifers have been defined within the Recent Alluvium and Lakewood and San Pedro Formations. According to DWR (1961), sediments from ground surface to approximately 20 to 50 ft bgs in the vicinity of the Site are comprised of Recent Alluvium. Hydrostratigraphic units within the Recent Alluvium include the Semiperched Aquifer, Bellflower Aquiclude and the Gaspur Aquifer. However, it is apparent from DWR (1961) that the Gaspur Aquifer may be absent in the immediate vicinity of the Site. In this case, subsurface sediments from about 20 and 50 ft bgs may represent an unnamed aquiclude of the Lakewood Formation, and the first major aquifer beneath the Site would be the Exposition Aquifer of the Lakewood Formation, beginning at a depth of approximately 60 to 70 ft bgs (DWR, 1961).

The Exposition Aquifer is roughly 80 to 100 feet thick in the vicinity of the Site (DWR, 1961). Underlying the Exposition Aquifer is an unnamed aquiclude that may be present in substantial thickness in the vicinity of the Site. Beneath this unnamed aquiclude is the Gage Aquifer, which is also part of the Lakewood Formation. The Gage Aquifer is roughly 50 to 60 feet thick and has a maximum depth of approximately 260 to 300 ft bgs in the vicinity of the Site (DWR, 1961).

Beneath the Gage Aquifer are the Hollydale Aquifer, Jefferson Aquifer, Lynwood Aquifer, Silverado Aquifer, and the Sunnyside Aquifer of the San Pedro Formation. According to DWR (1961), the Hollydale Aquifer may be partially or completely absent in the vicinity of the Site. A significant unnamed aquiclude, approximately 110 to 130 feet thick, is present between the base of the Gage Aquifer of the Lakewood Formation and the Jefferson Aquifer of the San Pedro Formation. The Jefferson, Lynwood and Silverado Aquifers range from 50 to 230 feet in thickness and appear to be separated by minor aquicludes in the vicinity of the Site. The base of the Silverado Aquifer is present at approximately 770 to 810 ft bgs in the

vicinity of the Site. The Silverado and Sunnyside Aquifers are separated by an unnamed aquiclude approximately 260 feet in thickness. The Sunnyside Aquifer is approximately 260 feet thick in the vicinity of the Site.

Underlying the San Pedro Formation are the Pliocene marine sediments of the Pico Formation. Although portions of the Pico Formation may be sufficiently permeable to transmit water, the water is of poor quality and unsuitable for general use (DWR, 1961). It can be inferred from maps in DWR (1961) that the base of the utilized groundwater-bearing sediments in the vicinity of the Site occurs near the base of the Sunnyside Aquifer a depth of approximately 1,300 ft bgs.

Groundwater recharge in the vicinity of the Site is largely due to surface and subsurface inflow through the Whittier Narrows, an erosional gap between the Puente and Merced Hills (DWR, 1961). This area is the main conduit for groundwater flow from the inland San Gabriel Basin to the Central Basin. The structure of the Whittier Narrows area, resulting from both block faulting and transverse folding, has produced considerable merging of aquifers throughout the Narrows. Artificial recharge from surface and subsurface water inflows in the Narrows and spreading grounds areas on the Rio Hondo River are responsible for the largest contribution to groundwater replenishment of the aquifers of the Central Basin (DWR, 1961).

2.2.4. Hydrostratigraphic Units beneath the Site

As described above, the subsurface sediments observed at the Site may be correlated with the Recent Alluvium of the Downey Plain. Given the reported mode of deposition for sediments of the Downey Plain, i.e., stream channel and overbank splay deposits associated with the Quaternary fluctuations of Los Angeles River, it is likely that the geometry of lithologically distinct sediments present at the Site are discontinuous laterally as well as vertically in the immediate vicinity of the Site. Based on the lithologies observed during Site investigations, it appears that the majority of the subsurface soil from ground surface to a depth of approximately 70 ft bgs is likely to be associated with the Bellflower Aquiclude. However, the presence of sandy soil at depths below approximately 65 ft bgs at the Site may be indicative sediments of the Gaspur or Exposition aquifers.

2.3. Offsite Groundwater Production

According to the RWQCB (1994), beneficial uses of groundwater within the Central Basin of Los Angeles County include municipal, industrial, process, and agricultural uses. Currently, it appears that groundwater production wells located within one mile of the Site are used primarily for municipal and industrial uses.

EKI contacted DWR, the RWQCB, and the Los Angeles County Department of Public Works, Hydraulic/Water Conservation Division ("LADPW") to obtain information regarding groundwater production wells within a one-mile radius of the Site. On 9 November 2000, Mr. Brian Moniz of DWR transmitted a computerized database file of production well information to EKI. In addition, EKI referred to well location maps published by DWR, RWQCB, and the LADPW. Based on these sources of information, EKI prepared a summary table of abandoned, inactive, and active groundwater production wells located within a one-mile radius of the Site (see Table 1). Of the 90 wells listed in Table 1, only 20 appear to have been used recently for groundwater production. The locations of the groundwater production wells reported to be currently or recently active are shown on Figure 4. Of the 20 groundwater production wells plotted on Figure 4, four are reportedly used for industrial purposes and the remainder are used for municipal water supply.

To the extent possible, EKI has obtained publicly available information regarding the well owner, construction details, and the status of each well listed in Table 1. However, as stipulated in Section 13752 of the California Water Code, water well information provided to the State in boring logs and reports is confidential and shall not be made available for inspection by the public without written authorization from the well owner. For the purpose of obtaining current information regarding active municipal groundwater production wells identified within one mile of the Site, EKI directly contacted the municipalities identified as operators of these wells. EKI did not contact owners of groundwater production wells used for industrial purposes. A discussion of information obtained from municipal water service agencies and purveyors is provided in the following section.

2.3.1. Information Obtained from Municipal Agencies

EKI contacted Mr. Ramiro Hernandez of the City of South Gate on 9 November 2000 regarding information concerning the status of groundwater production wells owned by the City of South Gate. According to Mr. Hernandez, the City of South Gate currently operates nine groundwater supply wells that are located within approximately one mile of the Site. These wells are listed in Table 1 and their locations are plotted on Figure 4. Of these nine wells, five are currently inactive. Three of the five inactive wells apparently are not operational due to mechanical problems. Mr. Ramirez indicated that repairs to the three inactive wells would be performed in the near future. Two of the wells that are inactive were shut down due to elevated concentrations of contaminants (primarily PCE) detected in samples of groundwater collected from these wells. The following table summarizes the status of groundwater production wells owned by the City of South Gate within approximately one mile of the Site and the current status of each well.

State Well Number	City Well Number	Approximate Distance and Direction from the Site	Well Status	Notes
2S/12W-31M2	7	1,000 feet northwest	Inactive	Previous wellhead treatment for VOCs (PCE). Chromium VI detected in Aug. 2000.
3S/12W-06D1	13	2,900 feet southwest	Active	PCE contamination, wellhead treatment ongoing.
3S/12W-06D2	14	2,700 feet southwest	Active	PCE contamination, wellhead treatment ongoing.
3S/12W-06D3	18	2,900 feet southwest	Active	PCE contamination, wellhead treatment ongoing.
3S/12W-06D4	19	2,300 feet southwest	Active	PCE contamination, wellhead treatment ongoing.
3S/12W-05M1	22-B	5,100 feet southeast	Inactive	PCE contamination, wellhead treatment using UV-hydrogen peroxide system under permitting.
3S/12W-06B3	23	1,700 feet south-southeast	Standby	Nearby chromic acid spill recently. Well on standby pending soil investigation to determine possible impacts to groundwater.
2S/12W-31Q3	24	1,900 feet east-southeast	Inactive	Inactive due to mechanical problems, needs rehabilitation.
2S/12W-31Q2	25	2,000 feet east-southeast	Inactive	Inactive due to mechanical problems, needs rehabilitation.

EKI also contacted Tract 349 Mutual Water Company ("Tract 349") regarding a groundwater supply well (2S/12W-31D1) located within one mile of the Site. According to information obtained by DWR, Tract 349 operates two wells in the South Gate area. According to a representative of Tract 349, no information regarding the well 2S/12W-31D10 was available for public review and company policy prohibits release of such information. Tract 349 recommended that EKI obtain information regarding the well from DWR. Based on our discussions with DWR, it appears that no information regarding this well is publicly available.

2.3.2. Offsite Groundwater Production Summary

Publicly available information obtained by EKI suggests that as many as 90 abandoned, inactive, and active groundwater production wells may be located within a one-mile radius of the Site. Of these 90 wells, only 20 appear to have been used recently for groundwater production. Of the 20 groundwater production wells in recent use, four are reportedly used for industrial purposes and the remainder are used for municipal water supply.

As is shown in Table 1, each of the ten nearby, offsite, recently active groundwater production wells for which EKI was able to obtain construction information is screened at least 300 feet below the groundwater monitoring wells at the Site. This suggests that the dissolved VOCs detected in groundwater beneath the Site may be vertically separated from the screens of these offsite groundwater production wells by several significant confining

layers. Given this vertical separation and the fact that the offsite groundwater production wells are located at least 1,000 feet in horizontal distance from the Site, it is unlikely that the dissolved VOCs detected in groundwater beneath the Site have impacted groundwater extracted by these offsite wells.

3. WORK PLAN FOR GROUNDWATER REMEDIATION

3.1. Conceptual Design of Proposed SVE/Air Sparging System

Based on the available Site data presented above in Section 2, it is proposed that the SVE system at the Site be augmented to enhance the removal of VOCs from groundwater in the vicinity of the former clarifier on the Firestone Property. The SVE system will be augmented by introducing compressed air into an air sparging well that will be located immediately north of the location of the former clarifier (see Figure 3). The air sparging well will be constructed of two-inch diameter PVC casing, with a screened interval situated from approximately 65 ft bgs to 70 ft bgs (see Figure 5). This well construction will place the screened interval about 20 to 25 feet below the groundwater table. It is anticipated that the flow rate of compressed air to this well will be approximately 20 standard cubic feet per minute ("scfm").

It is anticipated that the introduction of compressed air into the proposed air sparging well will promote the volatilization and transfer of dissolved VOCs from the groundwater to the overlying vadose zone soil. The VOCs will then be removed from the vadose zone soil through the continued operation of the existing SVE system at the Site. In addition, groundwater monitoring well MW-1 will be connected to the SVE system so that the portion of the screened interval of this well (40 to 70 ft bgs) that is above the groundwater table will allow extraction of soil vapor from this well. The vapor extraction piping will be constructed to allow disassembly for quarterly groundwater monitoring of well MW-1.

The basis of the air sparging and SVE treatment in each treatment zone at the Site are described below.

3.2. Shallow Treatment Zone

The Shallow Treatment Zone extends from approximately 10 ft bgs to the top of the clay layer that is found at approximately 25 ft bgs, and is centered on the location of the former clarifier at the Firestone Property that is a suspected VOC release point. Extraction well SVE-1 is located adjacent to the former clarifier and is screened from approximately 17 to 25 ft bgs. This well specifically targets the soil beneath the former clarifier and in the vicinity of soil borings B4 and B19, where elevated concentrations of TCE and PCE were detected in soil samples collected from the shallow vadose zone (see Appendices A and D).

Two additional soil vapor extraction wells (SVE-2 and SVE-3) were also installed in the Shallow Treatment Zone, as shown on Figure 3. These wells are located outside the area

where elevated VOC concentrations have been detected in soil, but are within the areas where TCE or PCE were detected at concentrations above 10 ug/L in samples of soil gas collected during the soil gas survey in December 1997. All SVE wells and vacuum monitoring points in the Shallow Treatment Zone are constructed with nominal two-inch diameter polyvinyl chloride ("PVC") well casings and screens. The location of well SVE-2 is approximately 40 feet east of well SVE-1, and the location for SVE-3 is approximately 30 feet northwest of well SVE-1.

Two vacuum monitoring points were installed in the Shallow Treatment Zone. Vacuum monitoring points VMP-1 and VMP-2 were installed 10 and 20 feet, respectively, east of extraction well SVE-1 (see Figure 3).

3.3. Deep Treatment Zone

The Deep Treatment Zone includes unsaturated and saturated soil beneath the clay layer observed at approximately 25 ft bgs, and extends vertically from approximately 25 ft bgs to the shallow groundwater at approximately 70 ft bgs. In the lower portion of this zone is a sand zone that is overlain by silty-sand and sandy-silt zones of lower permeability (see Appendix D).

Extraction well SVE-D1 is installed near the former clarifier and extraction well SVE-1, and is screened from approximately 30 to 45 ft bgs (see Figure 3). Extraction wells VMP-D1 and VMP-D2 were installed in the same boreholes as extraction wells SVE-2 and SVE-3 using nested-well construction. Wells VMP-D1 and VMP-D2 are located approximately 35 feet from well SVE-D1. Extraction well SVE-D1 is constructed with nominal 4-inch diameter PVC well casing and screen. Extraction wells VMP-D1 and VMP-D2 are constructed with nominal 2-inch diameter PVC well casings and screens.

Soil vapor extraction wells SVE-D1, VMP-D1, and VMP-D2 are currently used for two purposes: (1) to remove VOCs from soil in the vicinity of borings B18 and B19 (i.e., where the highest TCE concentrations have been detected in this depth range), and (2) to remove VOC vapors that migrate from the underlying groundwater in the area, reducing the potential for further vapor migration. Addition of an air sparging well is intended to enhance the removal of dissolved VOCs from groundwater in the vicinity of the former clarifier on the Firestone Property. Use of groundwater monitoring well MW-1 for soil vapor extraction will provide additional soil vapor extraction in the area of the Site characterized by the highest dissolved concentrations of VOCs.

3.4. Operation Strategy for the SVE/Air Sparging System

From March 2000 through the date of this work plan, an SVE system with an extraction capacity of approximately 200 scfm at a maximum operating vacuum of 15 inches mercury ("in-Hg") has been operating at the Site. After addition of the air sparging well, the SVE

system will continue to be operated to remove VOCs from both the Shallow and Deep Treatment Zones. Extraction rates will be adjusted to extract relatively more air from wells where relatively higher VOC concentrations are detected. Wells may be closed if the VOC removal rate from certain extraction wells is not significant.

The blower capacity of the system is more than adequate to serve all six existing extraction wells and groundwater monitoring well MW-1. It has been necessary to add dilution air from the atmosphere or recirculation air to maintain system flow rates and vacuum, thus the addition of well MW-1 to the SVE system will reduce the amount of dilution or recirculation air needed for system operation.

Depending on the ongoing operational data and estimated mass removal rates, the blower capacity may be redistributed on a weekly basis between the shallow and deep wells, thereby maximizing the overall VOC removal rates.

3.5. Off-Gas Treatment and Permitting

Based on recent operational data (see EKI, 26 October 2000), extracted soil vapors during future air sparging at the Site are likely to contain TCE, PCE, and other VOCs previously detected in soil, soil gas, and groundwater at the Site. TCE and PCE in the vapor phase are readily adsorbed by granular activated carbon ("GAC"). Therefore, GAC will continue to be used for off-gas treatment during ongoing operation of the SVE system at the Site.

The addition of an air sparging well and SVE from well MW-1 to the system can be accomplished under the limitations of the existing SCAQMD permit for the SVE system at the Site. If necessary, dilution air will be used to stay within permit limits for the maximum VOC concentrations at the inlet to the system blower.

3.6. Monitoring of the SVE/Air Sparging System

On approximately a weekly schedule, samples of soil gas will be collected from each operating SVE well and analyzed for total VOCs using a photoionization detector ("PID") in the field. These data will be used to track trends in total VOC concentrations being extracted during SVE operation. The operating vacuum and flow rate at each operating SVE well will also be recorded on a weekly basis.

On a quarterly schedule, samples of soil gas will be collected from each operating extraction well and the combined influent to the blower for the SVE and will be analyzed for VOCs at an offsite laboratory using an analytical EPA Method TO-14. These data will be used to track trends in VOC concentrations over time and to quantify VOC mass removal rates.

The combined SVE and air sparging system will be shut down for approximately two weeks prior to groundwater monitoring events at the Site to allow collection of static soil vapor samples from the SVE wells and vapor monitoring probes. Chemical analyses of the samples of soil vapor collected under static conditions are used to assess the progress and effectiveness of soil remediation at the Site (see EKI, 26 October 2000). The samples of soil gas samples collected under static conditions will be analyzed for VOCs at an offsite laboratory using EPA Method TO-14. The frequency of the static vapor sampling will be the same as the frequency of groundwater sampling at the Site (currently once per quarter).

3.7. Shutdown of the SVE/Air Sparging System

It is currently anticipated that the combined SVE and air sparging system will be operated until the VOC removal rate decreases to the point where it is determined that additional air sparging and SVE treatment will have a negligible effect on groundwater remediation. Webb will seek RWQCB concurrence when it is determined that air sparging/SVE operations should be discontinued. At this time, Webb is expecting to operate the air sparging/SVE system for approximately six months.

4. SUMMARY

This document summarizes Site conditions, describes local hydrogeology, identifies bodies of surface water and groundwater production wells within a one-mile radius of the Site, and presents a work plan for implementation of air sparging for enhanced recovery of VOCs from groundwater for the Webb property in South Gate, California. Beginning in 1996, Webb has engaged in several environmental investigations and remedial actions at its South Gate Site. These environmental programs have been performed with oversight from, and in cooperation with, the County of Los Angeles Department of Public Works and the RWQCB. At this time, Webb believes that the subsurface characterization and soil remediation activities are sufficiently complete to allow the initiation of remedial measures for groundwater at the Site.

The principal chemicals of concern in soil and groundwater beneath the Site are TCE, PCE, and c-1,2-DCE. A former, subsurface clarifier on the Firestone Property has been identified as the principal source of releases of VOCs to soil and groundwater beneath the Site. Remedial measures initiated at the Site include removal of the clarifier, quarterly groundwater monitoring, and operation of a soil vapor extraction system.

It has been estimated that 124 pounds of VOCs were extracted from soil during the first six months of operation of the SVE system at the Site. During the period of operation of the SVE system, the concentrations of TCE detected in samples of soil vapor have decreased during SVE operation at all well locations except extraction well SVE-2. The concentrations of TCE detected in samples of soil vapor collected from extraction well SVE-2 have remained relatively low (approximately 100 ppmv) and stable throughout operation of the SVE system. Comparison of the daily mass removal rates for the SVE system that were estimated using data collected on 13 July 2000 and 14 September 2000 indicates that the VOC mass removal rate decreased about 70 percent between these dates. Given the large decrease in the mass removal rates, it is anticipated that the proposed closure criteria for the SVE system will be achieved during the fourth quarter of 2000. When it appears that appropriate closure criteria have been met, Webb intends to request that the RWQCB prepare a letter stating that no further actions are necessary for remediation of soil at the Site.

Trichloroethene and c-1,2-DCE were the only VOCs detected in the samples of groundwater collected during the most recent monitoring event at the Site on 7 September 2000. Consistent with the results of previous groundwater monitoring at the Site, TCE was the chemical of concern detected with the greatest frequency (four of five wells) and at the highest concentration. However, the concentrations of TCE and c-1,2-DCE detected in samples of the groundwater collected from each of the monitoring wells at the Site have decreased during each of the last two quarters of monitoring. This decrease in the concentrations of TCE and c-1,2-DCE detected in samples of groundwater coincides with the

period of operation of the SVE system at the Site. The concentrations of TCE and c-1,2-DCE detected in samples of groundwater at the Site on 7 September 2000 are the lowest concentrations reported since groundwater monitoring began in March 1998. Samples of groundwater collected from downgradient monitoring well MW-4 have been non-detect for all VOCs during the last two quarters of monitoring.

Publicly available information presented in this document suggests that as many as 90 abandoned, inactive, and active groundwater production wells may be located within a one-mile radius of the Site. Of these 90 wells, only 20 appear to have been used recently for groundwater production. Each of the ten nearby, offsite, recently active groundwater production wells for which EKI was able to obtain construction information is screened at least 300 feet below the groundwater monitoring wells at the Site. This suggests that the dissolved VOCs detected in groundwater beneath the Site may be vertically separated from the screens of these offsite groundwater production wells by several significant confining layers. Given this vertical separation and the fact that the offsite groundwater production wells are located at least 1,000 feet in horizontal distance from the Site, it is unlikely that the dissolved VOCs detected in groundwater beneath the Site have impacted groundwater extracted by these offsite wells.

Historical groundwater monitoring data for the Site suggest that: 1) upgradient sources of TCE, and perhaps other VOCs, may have impacted groundwater beneath the Site and 2) monitoring well MW-4 has adequately defined the downgradient extent of VOC-impacted groundwater beneath the Site. In addition, the decrease in the concentrations of TCE and c-1,2-DCE detected in samples of groundwater collected at the Site from March through September 2000 may be a result of the operation of the SVE system at the Site. As presented in this document, Webb proposes to augment the removal of VOCs from groundwater beneath the Site by installing an air sparging well and initiating soil vapor extraction at groundwater monitoring well MW-1.

It is currently anticipated that the combined SVE and air sparging system will be operated until the VOC removal rate decreases to the point where it is determined that additional air sparging and SVE treatment will have a negligible effect on groundwater remediation at the Site. Webb will seek RWQCB concurrence when it is determined that air sparging/SVE operations should be discontinued. At this time, Webb is expecting to operate the air sparging/SVE system for approximately six months.

5. REFERENCES

California Department of Water Resources, Southern District, June 1961. *Bulletin No. 104: Planned Utilization of the Groundwater Basins of the Coastal Plain of Los Angeles County, Appendix A, Ground Water Geology.*

California Department of Water Resources, Southern District, undated. Miscellaneous well location maps.

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City of South Gate, undated. Miscellaneous well location maps.

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Erler & Kalinowski, Inc., 26 October 2000. *Quarterly Progress Report for July through September 2000, Jervis B. Webb Company Property, 5030 Firestone Boulevard, South Gate, California.*

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Erler & Kalinowski, Inc., 13 October 1999. *Quarterly Progress Report for July to August 1999, Jervis B. Webb Company Property, 5030 Firestone Boulevard, South Gate, California.*

TABLES

Table 1
Offsite Groundwater Production Well Information

Report on Site Conditions, Local Hydrogeology, and Offsite Groundwater Production and Work Plan for Groundwater Remediation
Jervis B. Webb Company of California
5030 Firestone Boulevard, South Gate, California

State Well Number	LACDPW Number	Well Use	Owner	Owner Well Number	Screen Interval (ft bgs)	Total Depth (ft bgs)	Well Status
Active and Recently Active Municipal Groundwater Production Wells							
3S/12W-05M1	1536F	MUN	City of South Gate	22-B	495-545	578	Inactive
3S/12W-05P1		MUN	Rancho Los Amigos Hospital			591	
3S/12W-05P2		MUN	Rancho Los Amigos Hospital			846	
3S/12W-06B3	1525D	MUN	City of South Gate	23	530-798	846	Standby
3S/12W-06D1	1515G	MUN	City of South Gate	13			Active
3S/12W-06D2	1515J	MUN	City of South Gate	14	745-767	813	Active
3S/12W-06D3	1515K	MUN	City of South Gate	18	600-758	792	Active
3S/12W-06D4	1515L	MUN	City of South Gate	19	610-746	792	Active
2S/13W-25Q1	1503A	MUN	City of Huntington Park	12	522-1504		
2S/12W-29M5		MUN	Unknown				
2S/12W-30E3		MUN	Unknown				
2S/12W-31D1	1513	MUN	Tract 349 Mutual Water Co.	2			
2S/12W-31M2	1514A	MUN	City of South Gate	7	500-600		Inactive
2S/12W-31Q2	1525H	MUN	City of South Gate	25	400-550	1326	Inactive
2S/12W-31Q3	1525G	MUN	City of South Gate	24	570-630	1266	Inactive
2S/13W-36H1	1514B	MUN	Unknown				
Active and Recently Active Industrial Groundwater Production Wells							
3S/12W-05C6	--	IND	Rockview Milk Farms	NEW-1	440-516		Unknown
3S/12W-05D5	--	IND	Lunday Thagard Oil Co.	SLY			Unknown
2S/12W-31B3	1524F	IND	Southern California Water Co.	HOF02			Unknown
2S/13W-36A2	--	IND	U.S. Gypsum Company	2			Unknown
Abandoned or Potentially Existing Additional Wells with Unknown Status							
3S/13W-01A1	1515E		Unknown				
3S/13W-01B1	1505B		Unknown				
3S/13W-01G1	1505A	MUN	City of South Gate	8		764	Abandoned
3S/13W-01H1	1515B		Unknown				
3S/12W-05C1	--		Unknown				
3S/12W-05C2	--		Unknown				
3S/12W-05C3	--		Unknown				
3S/12W-05C4	--		Unknown				
3S/12W-05C5	--		Unknown				
3S/12W-05D1	1535A		Unknown				
3S/12W-05D2	1535H		Unknown		211-221	222	
3S/12W-05D3	1535L		Sulley Miller Co.		164-180		
3S/12W-06A1	1535C		Unknown				
3S/12W-06A3	1525E		J.J. Hohn		178-190		
3S/12W-06A4	--		Unknown				
3S/12W-06A5	--		Corn Fed Cattle Co.		200-202		
3S/12W-06B1	1525		Unknown				
3S/12W-06B2	1525C		Unknown				

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State Well Number	LACDPW Number	Well Use	Owner	Owner Well Number	Screen Interval (ft bgs)	Total Depth (ft bgs)	Well Status
3S/12W-06B4	--		Water Replenishment District		1440-1460		
3S/12W-06B5	--		Water Replenishment District		1320-1340		
3S/12W-06B6	--		Water Replenishment District		910-930		
3S/12W-06B7	--		Water Replenishment District		565-585		
3S/12W-06B8	--		Water Replenishment District		230-250		
3S/12W-06C1	--		Unknown				
3S/12W-06C2	--		Unknown				
3S/12W-06E1	--		Unknown				
3S/12W-06E2	1515H		Unknown				
3S/12W-06F1	1515C		Unknown				
3S/12W-06F2	1515D		Unknown				
3S/12W-06F3	--		Unknown				
3S/12W-06H1	1526E		A A Canfield Estate				
3S/12W-06H2	--		Unknown				
3S/12W-06J2	--		Peter Kiewit Sons Co.		206-214		
3S/12W-06J3	--		Unknown				
3S/12W-06K1	1526D		A A Canfield Estate		1054	1054	
2S/12W-30N1	1514A		Unknown				
2S/12W-31B1	1524		Unknown				
2S/12W-31B2	1524A		Unknown				
2S/12W-31B3	1524F		Unknown				
2S/12W-31G1	1524E		Los Angeles County Flood Control District		195-205	220	
	1524D		Unknown				
2S/12W-31H1	1534A		Rio Grande Oil Co.			575	
2S/12W-31J1	1535		Unknown				
2S/12W-31L1	1524B		Unknown			556	
2S/12W-31N1	1515M		City of South Gate		826-1383	1600	
2S/12W-31P1	1515		Unknown				
2S/12W-31P2	1515F		Unknown				
2S/12W-31P3	--		Unknown				
2S/12W-31P4	1515I		Unknown				
2S/12W-31Q1	1525B		P. Grassi & Co.			251	
2S/12W-32F1	1534		Frank Uriba			155	
2S/12W-32L1	1534B		Unknown				
2S/12W-32L2	1535H		Unknown				
2S/12W-32M1	1534C		Unknown				
2S/12W-32N1	--		Unknown				
2S/12W-32N2	--		Unknown				
2S/12W-32N3	1535M		Lunday Thagard Oil Co.		460-540		
2S/13W-36A1	--		American Pipe		497-510	600	
2S/13W-36B1	1504A		Los Angeles Water District	12-A-55	535-554	617	
2S/13W-36B2	1504D		Unknown				
2S/13W-36B3	1504B		Unknown				

Table 1
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Jervis B. Webb Company of California
5030 Firestone Boulevard, South Gate, California

State Well Number	LACDPW Number	Well Use	Owner	Owner Well Number	Screen Interval (ft bgs)	Total Depth (ft bgs)	Well Status
2S/13W-36F2	--		City of South Gate	20			Abandoned
2S/13W-36H2	--		U.S. Gypsum Company		840-860	875	
2S/13W-36H3	1514C		Unknown				
2S/13W-36K1	1505		Unknown				
2S/13W-36L1	--		Unknown				
2S/13W-36Q1	1504B		California Cyanide		710-715	724	
2S/13W-36R1	1515A		Los Angeles Water District	12-C-55	318-904	1000	
2S/13W-36R2	1515B		Unknown				

Abbreviations:

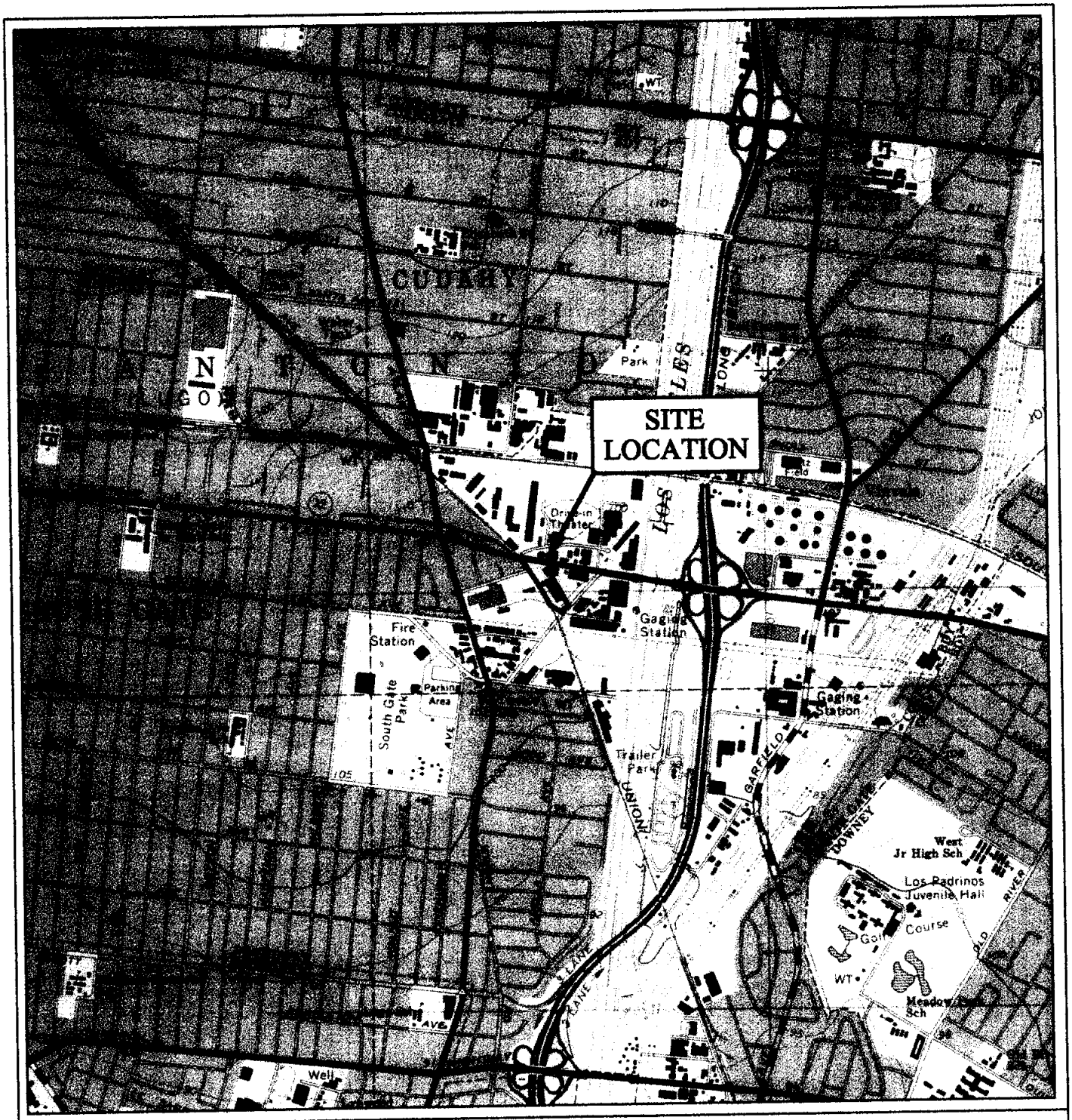
LACDPW = Los Angeles County Deprtment of Public Works
MUN = Municipal
IND = Industrial
ft bgs = feet beneath the ground surface

Notes:

1) Public information regarding groundwater production wells, well owners, construction details, and well status listed above was obtained from the following sources: 1) California Department of Water Resources, Southern District; 2) California Regional Water Quality Control Board, Los Angeles Region; 3) Los Angeles County Department of Public Works, Hydraulic/Water Conservation Division. Additional information was provided to EKI by City of South Gate, Water Department.

2) The information summarized above has been provided by others and is provided for evaluation purposes only. EKI does not certify or guarantee the accuracy of information provided in this table.

FIGURES



N

0 2,000 4,000

(Approximate Scale in Feet)

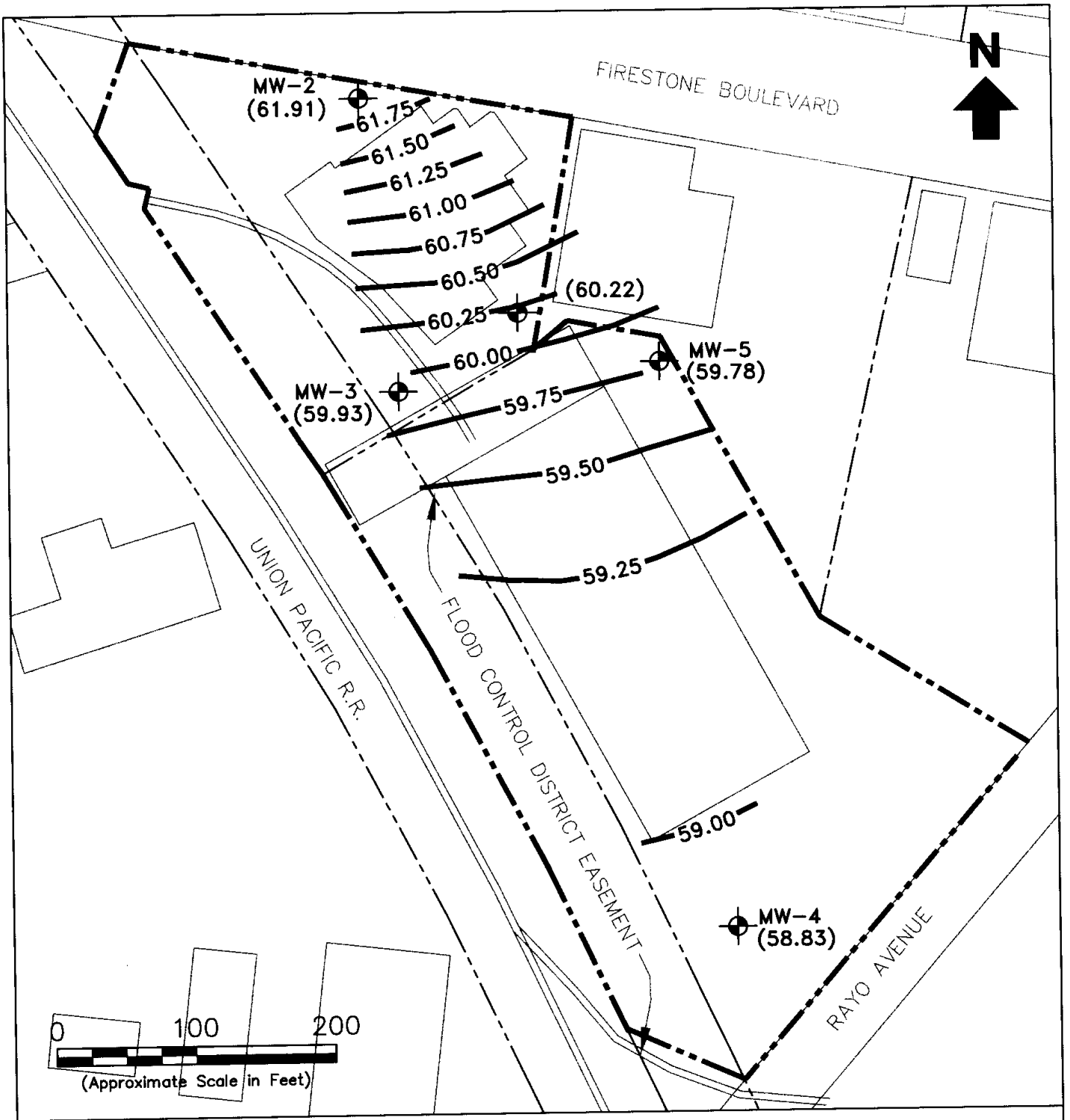
Source: U.S.G.S 7.5 Minute Series "South Gate" Quadrangle, 1964, photorevised 1981.

Erler & Kalinowski, Inc.

Site Location Map

Jervis B. Webb Company of California
South Gate, California
November 2000
EKI 991103.02

Figure 1



LEGEND

Contour Representing the Elevation of the Groundwater Table in Feet Above Mean Sea Level (msl)

MW-3 (60.93) Groundwater Monitoring Well with Groundwater Elevation (msl)

Property Line/Site Boundary

Notes:

1. All locations are approximate.
2. NR = Not Recorded

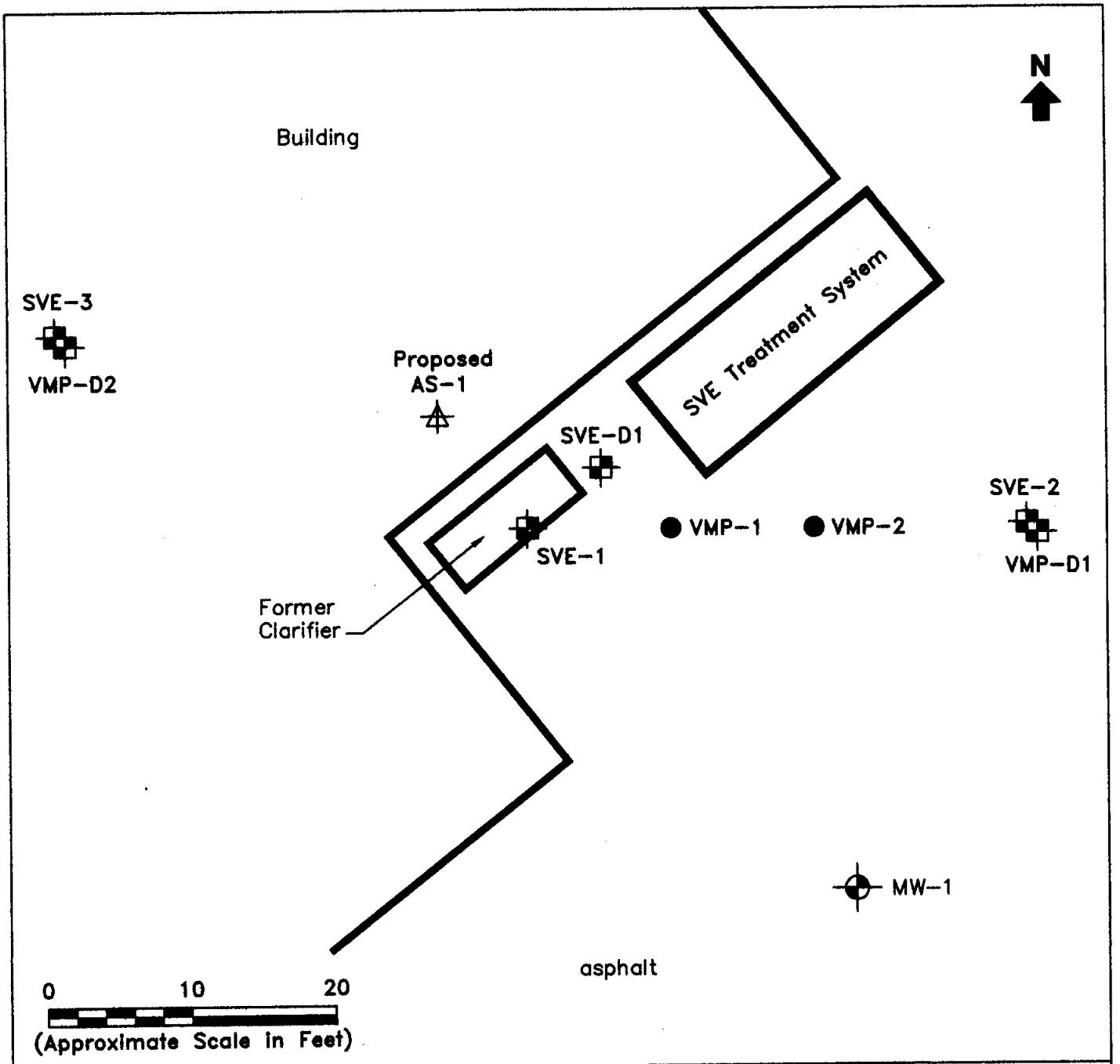
Erler & Kalinowski, Inc.

Elevation of the Groundwater Table on 26 October 2000

Jervis B. Webb Company of California
South Gate, California
November 2000
EKI 991103.02

Figure 2

002592



LEGEND

- Location of Soil Vapor Extraction Wells
- Location of Vapor Monitoring Probe
- Location of Groundwater Monitoring Well
- Location of Proposed Air Sparging Well
- Property Line/Site Boundary
- Building

Notes:

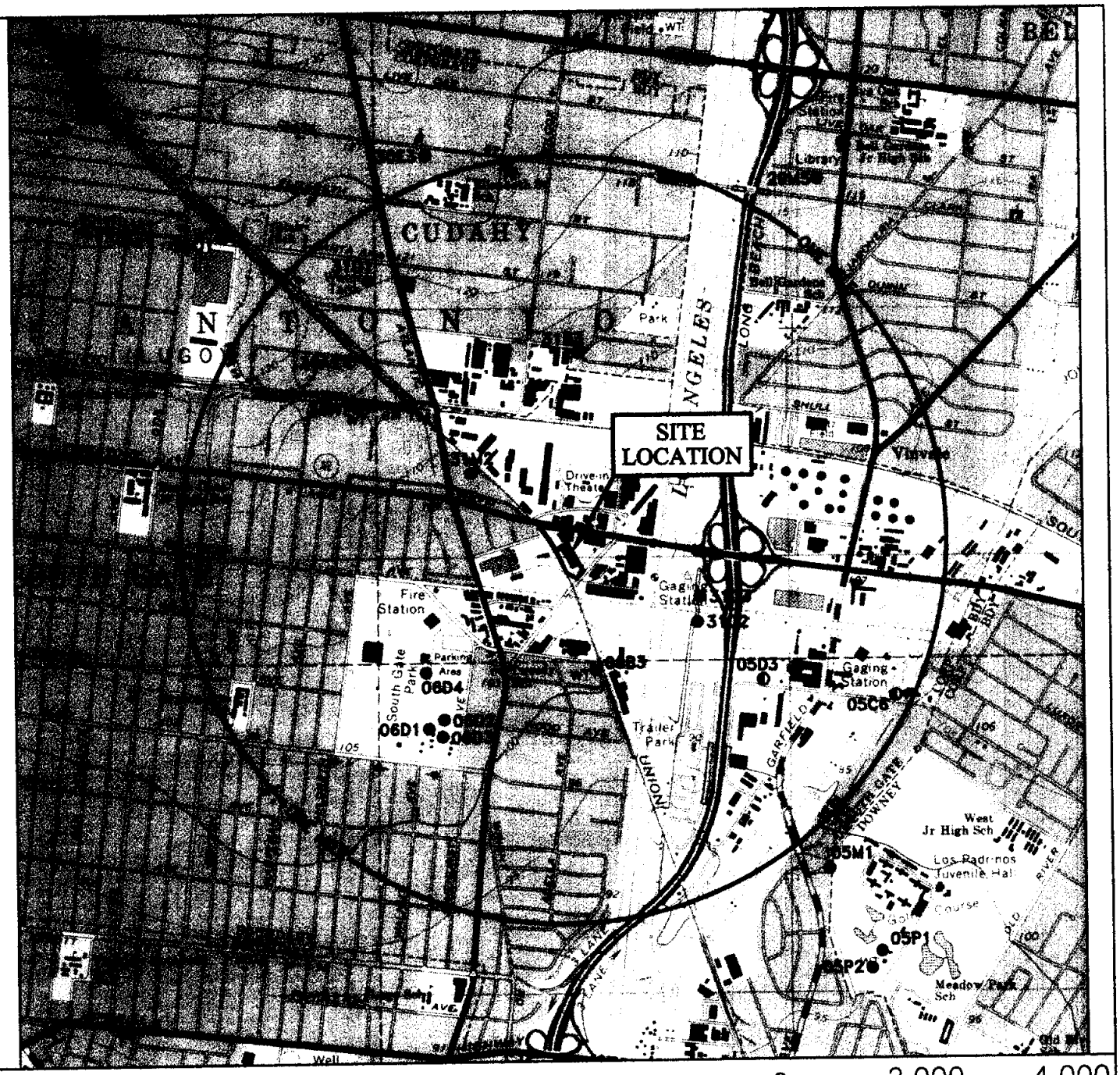
1. All locations are approximate.
2. SVE = Soil Vapor Extraction

Erler & Kalinowski, Inc.

Locations of Existing SVE Wells and Proposed Air Sparging Well

Jervis B. Webb Company of California
South Gate, California
November 2000
EKI 991103.02

Figure 3



LEGEND

- ● MUNICIPAL GROUNDWATER PRODUCTION WELL
- ◐ INDUSTRIAL GROUNDWATER PRODUCTION WELL

Notes:

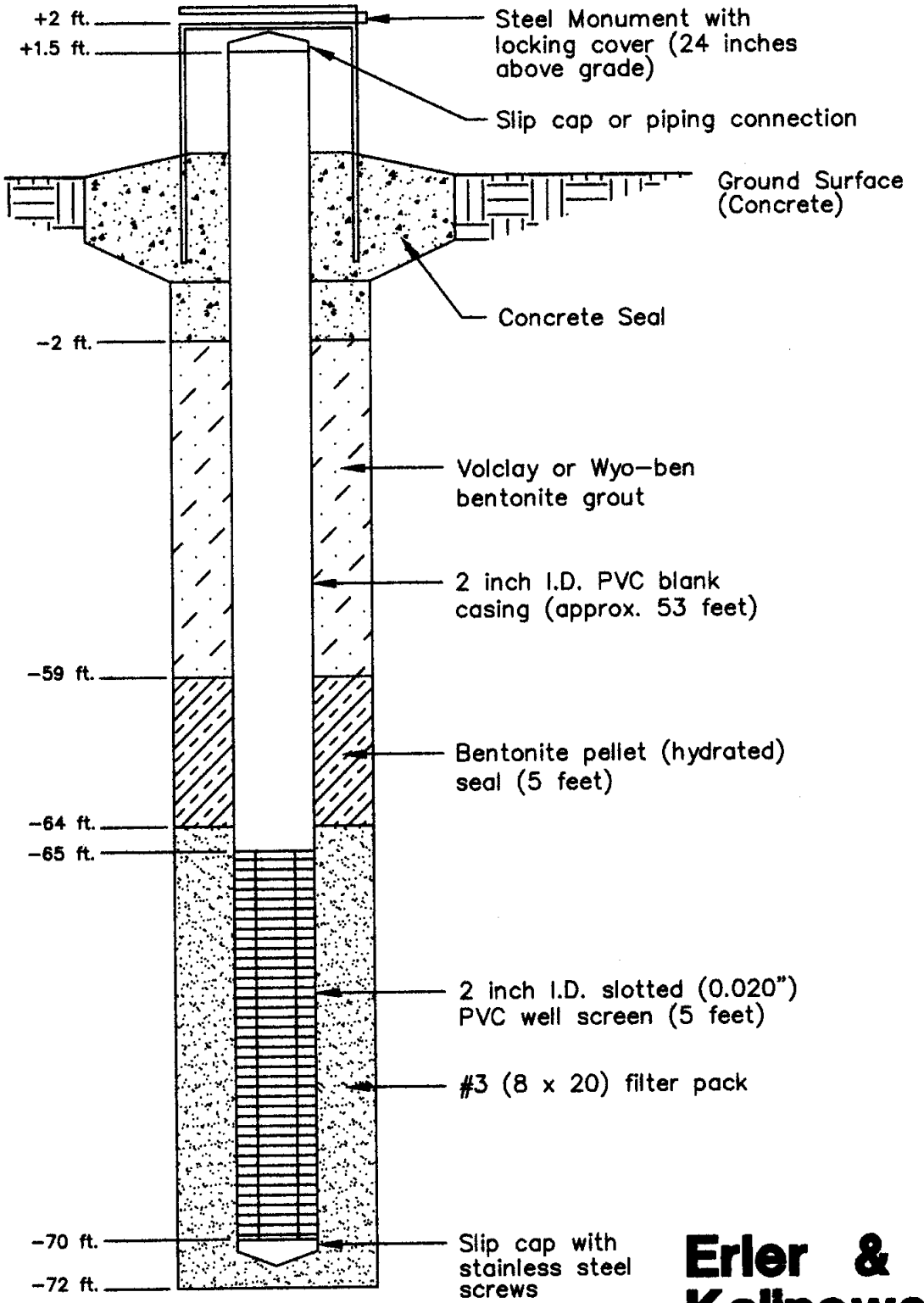
1. All locations are approximate.
2. Information concerning the locations and use of wells are based on data provide by the California Department of Water Resources, Southern District and the California Regional Water Quality Control Board, Los Angeles Region.

Erler & Kalinowski, Inc.

Area Map Showing Groundwater Production Wells Located in the Vicinity of the Subject Property

Jervis B. Webb Company of California
South Gate, California
November 2000
EKI 991103.02

Figure 4



Erler & Kalinowski, Inc.

Well Completion Schematic for Air Sparging Well AS-1

Jervis B. Webb Company of California
South Gate, California
November 2000
EKI 991103.02

Figure 5

Notes

1. Approximate total depth of boring is 72 feet.
2. Not to Scale.

APPENDICES

APPENDIX A

RESULTS OF PHASE II SOIL INVESTIGATION (FROM EKI, 18 FEBRUARY 1998)

TABLE 1

Soil Gas Analytical Results for VOCs

Phase II Soil Investigation Report

5030 Firestone Boulevard, South Gate, California

Sample Name	Concentration		
	PCE (ug/L)	TCE (ug/L)	1,1,1-TCA (ug/L)
SG-1-5	23	9.6	0.5
SG-2-5	4.7	3.9	0.5
SG-3-5	1.6	3.9	0.15
SG-4-5	5.2	8.9	0.13
SG-5-5	1.6	1.5	0.044
SG-5-5 (duplicate)	1.7	1.6	0.043
SG-6-5	0.061	<0.01	0.013
SG-7-5	0.075	<0.01	<0.01
SG-8A-5	1.1	2.3	0.46
SG-8B-5	4.1	4.4	0.65
SG-8C-5	5.8	4.5	0.59
SG-9-5	25	11	0.71
SG-10-5	28	13	0.26
SG-11-5	0.94	0.47	0.036
SG-12-5	<0.01	<0.01	<0.01
SG-13-5	5	7.9	0.18
SG-14-5	28	8	0.5
SG-15-5	5.9	4.7	0.2
SG-16-5	1	0.96	0.046
SG-17-5	4.2	2.2	0.2
SG-18-5	0.13	0.074	0.017
SG-19-5	0.12	<0.01	<0.01
SG-20-5	0.74	0.14	0.082
SG-21-5	3.7	2.5	0.34
SG-22-5	25	11	0.89
SG-23-5	1.3	1.2	0.13
SG-24-5	0.57	0.33	0.080
SG-24-5 (duplicate)	0.68	0.34	0.08
SG-25-5	<0.01	<0.01	0.12
SG-25-5 (duplicate)	<0.01	<0.01	0.13
SG-26-5	<0.01	<0.01	0.12
SG-27-5	<0.01	<0.01	0.048
SG-28-5	<0.01	<0.01	<0.01
SG-29-2	0.036	0.020	0.020
SG-30-3	0.028	0.13	<0.01
SG-31-3	0.021	<0.01	<0.01
SG-32-5	<0.01	<0.01	<0.01
SG-33-5	3.2	0.41	0.18
SG-34-5	6.3	2.4	0.26
SG-35-5	1.9	3.6	0.12
SG-36-5	3.0	25	0.24
SG-37-5	2.0	12	0.18

TABLE 1

Soil Gas Analytical Results for VOCs

Phase II Soil Investigation Report

5030 Firestone Boulevard, South Gate, California

Notes:

1. Abbreviations:
   VOCs = volatile organic compounds
   PCE = tetrachloroethene
   TCE = trichloroethene
   1,1,1-TCA = 1,1,1-trichloroethane
   ug/L = micrograms per liter
2. Analyses performed by Interphase, Inc. in an on-site mobile laboratory.
3. Samples collected on 1 and 2 December 1997.
4. Sample depth indicated in sample name. Depth indicated by last number separated by a hyphen in each sample description (i.e. sample SG-5-5 collected at 5 feet below ground surface). Soil gas collected at 5 feet below ground surface except at locations SG-29, SG-30 and SG-31.
5. Additional compunds detected were as follows:
   Chloroform: SG-1-5 = 0.055 ug/L; SG=9=5 = 0.056 ug/L; SG-10-5 = 0.053 ug/L; SG-14-5 = 0.038 ug/L; SG-22-5 = 0.040 ug/L; SG-36-5 = 0.058 ug/L
   Trichlorofluoromethane (F-11): SG-22-5 = 0.010 ug/L; SG-33-5 = 0.032 ug/L
   Dichlorodifluoromethane (F-12): SG-33-5 = 1.2 ug/L
6. Analyses performed in accordance with Los Angeles Regional Water Quality Control Board guidelines for active soil gas sampling.

TABLE 2

Soil Analytical Results for pH

Phase II Soil Investigation Report

5030 Firestone Boulevard, South Gate, California

Sample Number	Depth (ft. bgs)	pH
B1-5.5	5.5	7.9
B4-6	6	8.3
B5-1	1	7.7
B5-6	6	8.0
B6-6	6	6.3
B7-2	2	7.6
B7-6	6	6.7
B8-2	2	8.6
B8-6	6	8.8

Notes:

1. Analyses performed by Orange Coast Analytical, Inc.using EPA Method 9045

TABLE 3

Soil Analytical Results for TEPH

EKI 961025.02

5030 Firestone Boulevard, South Gate, California

Sample Number	Depth (ft. bgs)	TEPH (mg/kg)
B1-5.5	5.5	<0.5
B2-5.5	5.5	<0.5
B3-6	6	<0.5
B4-10.5	10.5	<0.5
B5-1	1	<0.5
B7-2	6	<0.5
B8-2	6	<0.5
B9-5.5	5.5	<0.5
B10-6	6	<0.5
B11-6	6	<0.5

Notes:

1. Abbreviations: TEPH = Total Extractable Petroleum Hydrocarbons
   mg/kg = milligrams per kilogram
2. Analyses performed by Orange Coast Analytical, Inc.using EPM method 8015 modified

TABLE 4

Soil Analytical Results for Metals

Phase II Soil Investigation Report

5030 Firestone Boulevard, South Gate, California

Sample Number	Depth	Concentration																	
		Antimony	Arsenic	Barium	Beryllium	Cadimium	Chromium IV	Chromium Tota	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
	(ft. bgs)	(mg/kg)																	
B1-5.5	5.5	<5.0	<1.0	64	<0.1	<0.1	<0.5	15	4.5	9	<1.0	<0.01	<0.5	5.2	<1.0	<0.1	<5.0	16	28
B1-11	11	<5.0	<1.0	83	<0.1	<0.1	<0.5	42	5.6	33	<1.0	<0.01	<0.5	8.1	<1.0	<0.1	<5.0	24	54
B4-6	6	<5.0	<1.0	67	<0.1	<0.1	<0.5	20	5.2	15	<1.0	<0.01	<0.5	6.3	<1.0	<0.1	<5.0	20	35
B4-10.5	10.5	<5.0	<1.0	57	<0.1	<0.1	0.88	14	3.7	11	<1.0	<0.01	<0.5	5.3	<1.0	<0.1	<5.0	16	29
B4-16	16	<5.0	<1.0	94	<0.1	<0.1	<0.5	30	8.3	13	<1.0	<0.01	<0.5	14	<1.0	<0.1	<5.0	25	50
B5-1	1	<5.0	<1.0	57	<0.1	<0.1	<0.5	12	3.9	5.1	<1.0	<0.01	<0.5	5.4	<1.0	<0.1	<5.0	15	29
B5-6	6	<5.0	<1.0	56	<0.1	<0.1	<0.5	13	4	12	<1.0	<0.01	<0.5	5.4	<1.0	<0.1	<5.0	17	28
B6-6	6	<5.0	<1.0	77	<0.1	<0.1	<0.5	74	5.2	120	<1.0	<0.01	<0.5	6.2	<1.0	<0.1	<5.0	21	45
B7-2	2	<5.0	<1.0	67	<0.1	<0.1	<0.5	16	4.2	6.2	<1.0	<0.01	<0.5	6.7	<1.0	<0.1	<5.0	19	33
B7-6	6	<5.0	<1.0	60	<0.1	<0.1	<0.5	19	4	18	<1.0	<0.01	<0.5	5.4	<1.0	<0.1	<5.0	16	30
B8-2	2	<5.0	<1.0	61	<0.1	<0.1	<0.5	21	4.3	7.3	<1.0	<0.01	<0.5	5	<1.0	<0.1	<5.0	16	29
B8-6	2	<5.0	<1.0	61	<0.1	<0.1	<0.5	16	4	8.5	<1.0	<0.01	<0.5	5.6	<1.0	<0.1	<5.0	17	28
B10-6	6	<5.0	<1.0	33	<0.1	<0.1	<0.5	7.3	2.3	3.4	<1.0	<0.01	<0.5	3	<1.0	<0.1	<5.0	8.9	16
B11-6	6	<5.0	<1.0	53	<0.1	<0.1	<0.5	13	3.6	6.4	<1.0	<0.01	<0.5	5.3	<1.0	<0.1	<5.0	16	25

Notes:

1. Abbreviations: mg/kg = milligrams per kilogram
2. Analyses performed by Orange Coast Analytical, Inc. using EPA Methods 6010 for all metals except Method 7196 was used for Chromium (IV) and Method 7471 was used for Mercury.
3. Samples from borings B1 through B13 collected on 28 October 1997.

TABLE 5

Soil Analytical Results for VOCs

Phase II Soil Investigation Report

5030 Firestone Boulevard, South Gate, California

Sample Number	Depth (ft. bgs)	Concentration PCE (mg/kg)	Concentration TCE (mg/kg)
B1-5.5	5.5	0.074	0.024
B1-11	11	0.13	0.037
B1-20	20	0.035	0.04
B2-5.5	5.5	0.018	0.0073
B2-10.5	10.5	0.045	<0.015
B3-6	6	0.042	0.01
B3-11	11	0.12	0.034
B4-6	6	0.076	0.021
B4-16	16	2.2	0.092
B4-20.5	20.5	140	270
B5-6	6	0.025	0.0053
B5-10.5	10.5	0.065	0.19
B6-6	6	0.13	0.031
B6-10.5	10.5	0.019	0.025
B7-6	6	0.055	0.019
B7-11	11	<0.015	<0.015
B8-6	6	0.0029	<0.0025
B8-11	11	0.041	0.05
B9-5.5	5.5	0.0036	<0.0025
B9-10.5	10.5	0.022	0.041
B10-6	6	0.027	0.0064
B10-11	11	<0.015	0.036
B11-6	6	0.061	0.016
B11-11	11	<0.015	0.035
B12-6	6	<0.0025	<0.0025
B13-6	6	<0.0025	<0.0025
B15-10	10	<0.005	<0.005
B15-16	16	<0.005	<0.005
B15-20.5	20.5	<0.005	<0.005
B15-26.5	26.5	0.054	0.38
B15-31	31	0.041	0.52
B15-35.5	35.5	0.026	0.14
B15-40	40	<0.005	1.2
B15-44.5	44.5	<0.005	1.3
B16-6	6	<0.005	<0.005
B16-11	11	<0.005	<0.005
B16-16	16	0.027	<0.005
B16-21	21	0.041	<0.005
B16-26	26	0.047	<0.005
B16-31	31	0.027	<0.005
B16-35.5	35.5	<0.005	<0.005
B16-41	41	<0.005	0.41
B16-46	46	<0.005	0.39

TABLE 5

Soil Analytical Results for VOCs

Phase II Soil Investigation Report

5030 Firestone Boulevard, South Gate, California

Sample Number	Depth (ft. bgs)	Concentration PCE (mg/kg)	Concentration TCE (mg/kg)
B16-51	51	<0.005	1.3
B17-6	6	<0.005	<0.005
B17-11	11	<0.005	<0.005
B17-16	16	<0.005	<0.005
B17-21	21	<0.005	<0.005
B17-26	26	<0.005	0.048
B17-31.5	31.5	<0.005	0.056
B17-36	36	<0.005	1.4
B17-41	41	<0.005	1.2
B17-46	46	<0.005	1.6
B17-53.5	53.5	<0.005	1.4
B18-11	11	0.4	0.11
B18-16	16	0.37	0.61
B18-21	21	0.66	16
B18-27	27	0.093	0.75
B18-31	31	0.14	2
B18-36	36	<0.005	0.056
B18-41	41	0.091	2.3
B18-46	46	0.18	8.7
B19-16	16	0.42	0.2
B19-21	21	0.28	1.8
B19-26	26	0.28	1.5
B19-31	31	0.25	1.2
B19-36.5	36.5	<0.005	0.11
B19-41	41	0.16	4
B19-46	46	0.18	4.3

Notes:

1. Abbreviations: VOCs = volatile organic compounds; PCE = tetrachloroethene; TCE = trichloroethene; mg/kg = milligrams per kilogram
2. Analyses performed by Orange Coast Analytical, Inc. usinf EPA methods 8240 and 8010
3. Samples from borings B1 through B13 collected on 28 October 1997. Samples from borings B15 through B19 collected on 1 December and 2 December 1997.

TABLE 6

Soil Geotechnical Testing Results

Phase II Soil Investigation Report

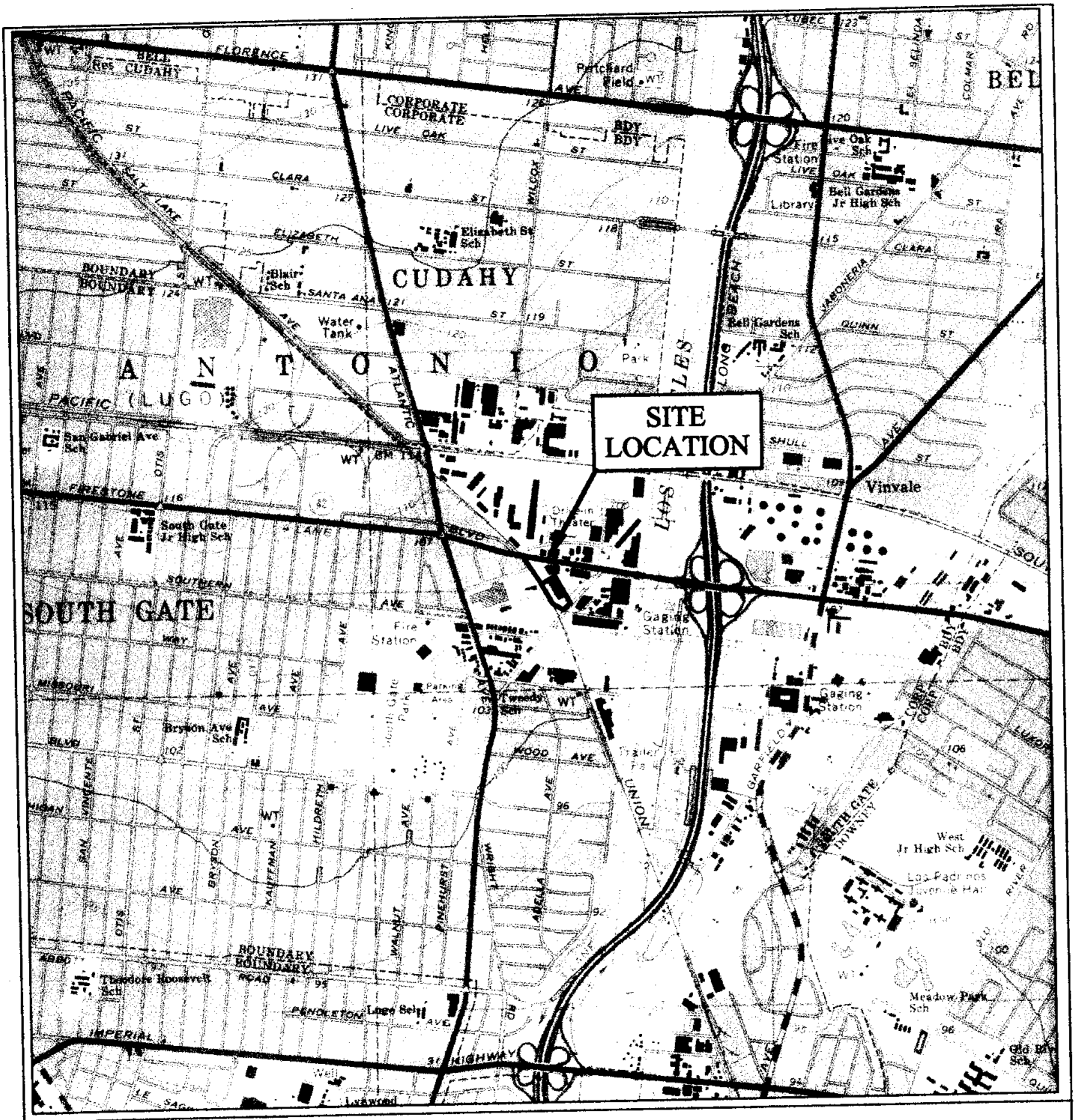
5030 Firestone Boulevard, South Gate, California

Sample Number	Depth (ft. bgs)	Moisture Content ASTM D2216 (%)	Dry Density ASTM D2937 (PCF)	Total Carbon Walkley-Black (%)	Effective Permeability API RP40 (millidarcy)	Air Conductivity API RP40 (cm/sec)
B15-15	15	22.3	102.1	0.88	N/A	NO FLOW
B15-31.5	31.5	35.8	82.8	0.96	N/A	NO FLOW
B-15-36	36	10.9	112.8	ND	452.7	3.0E-005
B-15-47.5	47.5	24.1	95.9	0.34	N/A	NO FLOW
B16-16.5	16.5	26.6	90.3	0.18	0.7	9.4E-008
B16-26.5	26.5	39.9	85.4	1.07	N/A	NO FLOW
B16-36	36	7.0	101.6	0.10	1246.4	8.2E-05
B16-46.5	46.5	25.3	105.8	0.61	0.4	5.2E-007
B17-16.5	16.5	23.4	108.9	0.61	N/A	NO FLOW
B17-26.5	26.5	38.1	89.3	1.11	N/A	NO FLOW
B17-36.5	36.5	26.1	99.4	0.57	0.6	9.2E-008
B17-46.5	46.5	21.5	108.0	0.58	1.1	1.4E-007

Notes:

1) Abbreviations: ND = not detectable; cm/sec = centimeters per second; PCF = pounds per cubic foot; N/A = not analyzed

2. Analyses performed by Environmental Geotechnology Laboratory, Inc.
3. Samples from borings collected from borings B15 through B19 collected on 1 December and 2 December 1997.



N

0 2,000 4,000

(Approximate Scale in Feet)

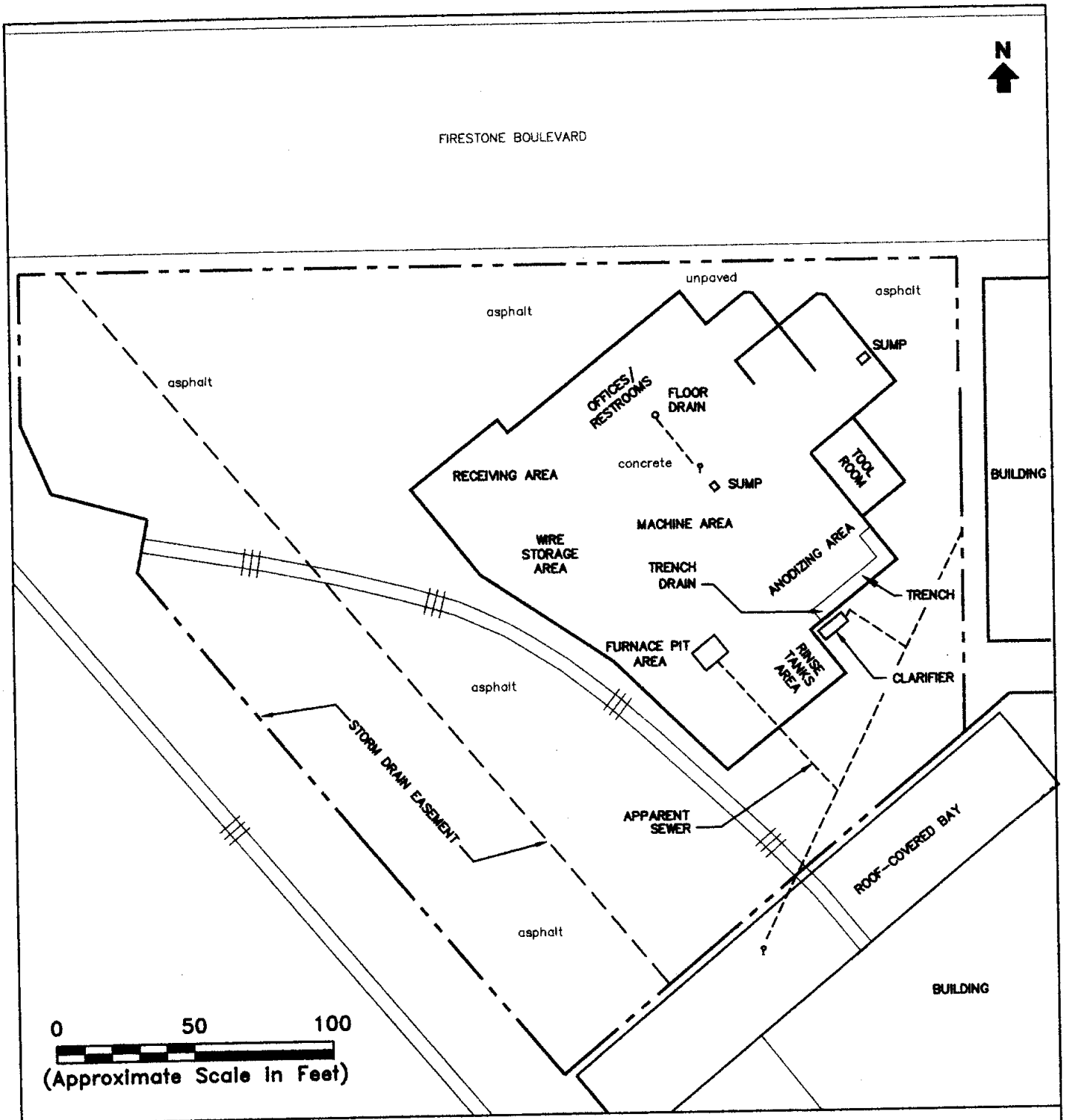
Source: U.S.G.S 7.5 Minute Series "South Gate" Quadrangle, 1964, photorevised 1981.

Erler & Kalinowski, Inc.

Site Location Map

Jervis B. Webb Company
South Gate, California
February 1998
EKI 961025.02

Figure 1



LEGEND

- PROPERTY LINE/BOUNDARY
- BUILDING
- RAILROAD SPUR
- SEWER (not confirmed)
- STORM DRAIN EASEMENT (not confirmed)

Notes:

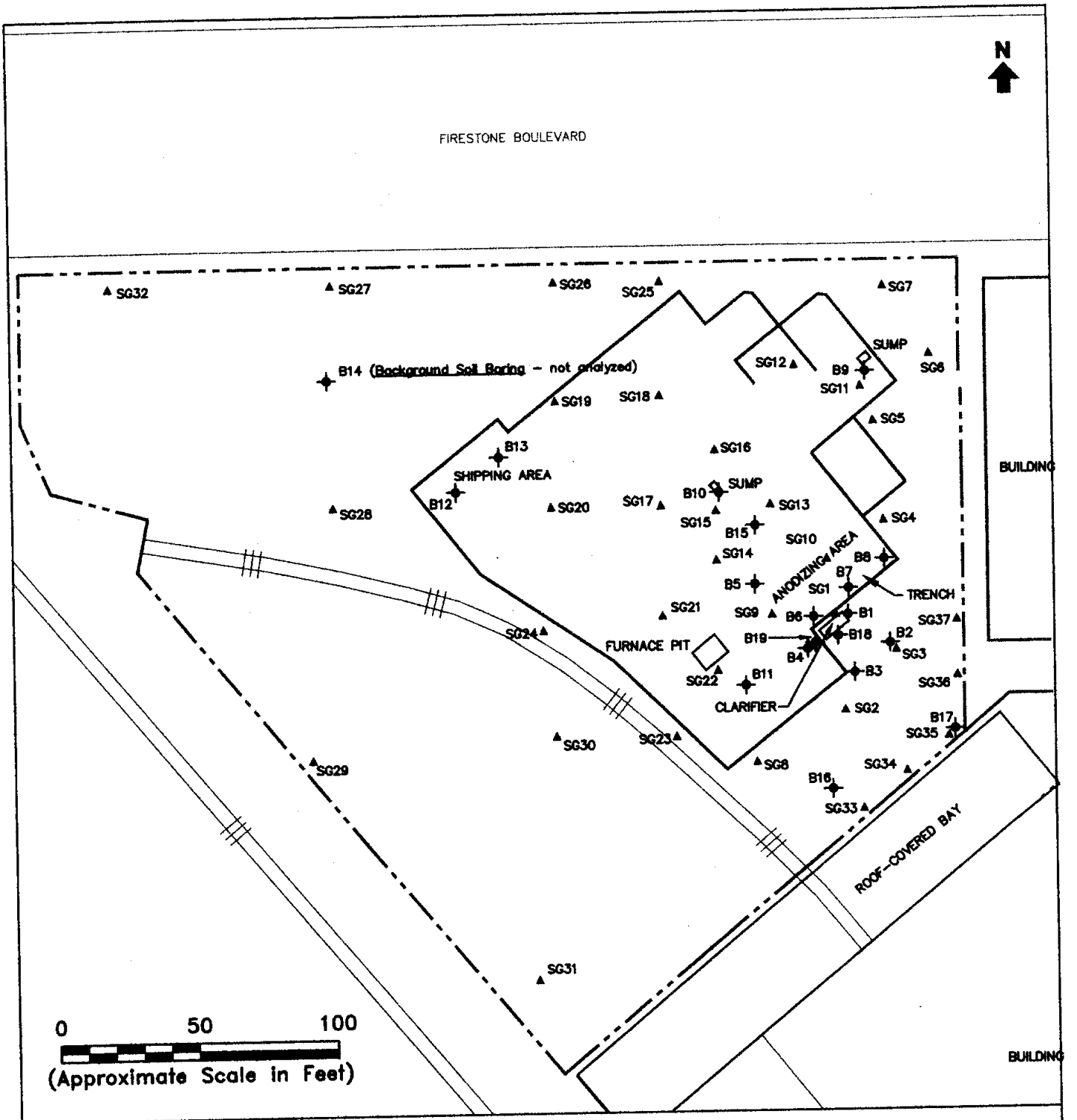
1. All locations are approximate.

Erler & Kalinowski, Inc.

Subject Property Features
5030 Firestone Boulevard

Jervis B. Webb Company
South Gate, CA
February 1998
EKI 961025.02

Figure 2



LEGEND

- SOIL GAS SAMPLING LOCATION
- SOIL GAS SAMPLING LOCATION
- PROPERTY LINE/BOUNDARY
- BUILDING
- RAILROAD SPUR

Notes:

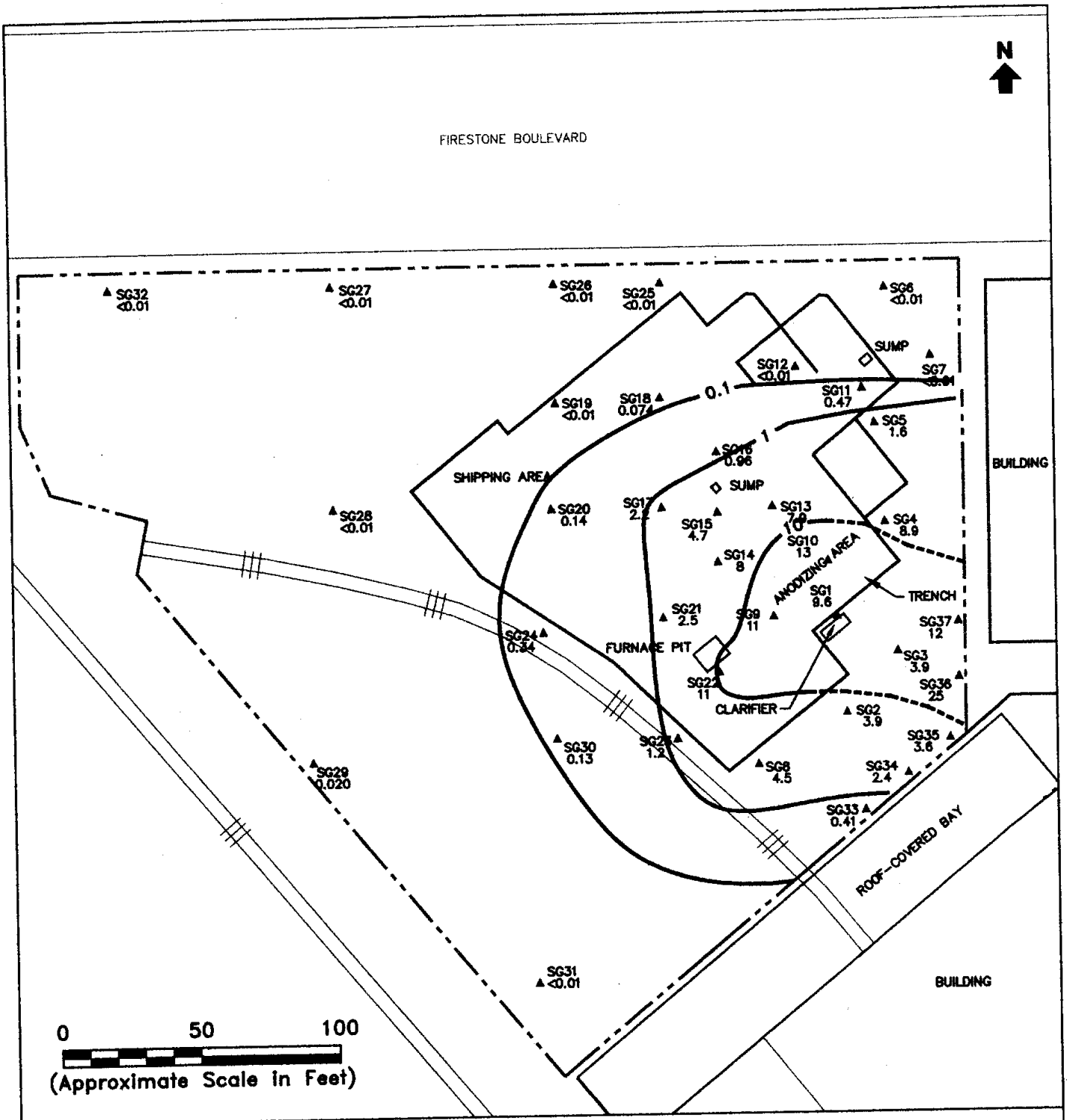
1. All locations are approximate.

Erler & Kalinowski, Inc.

Locations of Soil and Soil Gas Sampling

Jervis B. Webb Company
South Gate, CA
February 1998
EKI 961025.02

Figure 3



LEGEND

- ▲ SOIL GAS SAMPLING LOCATION
- PROPERTY LINE/BOUNDARY
- BUILDING
- RAILROAD SPUR

Notes:

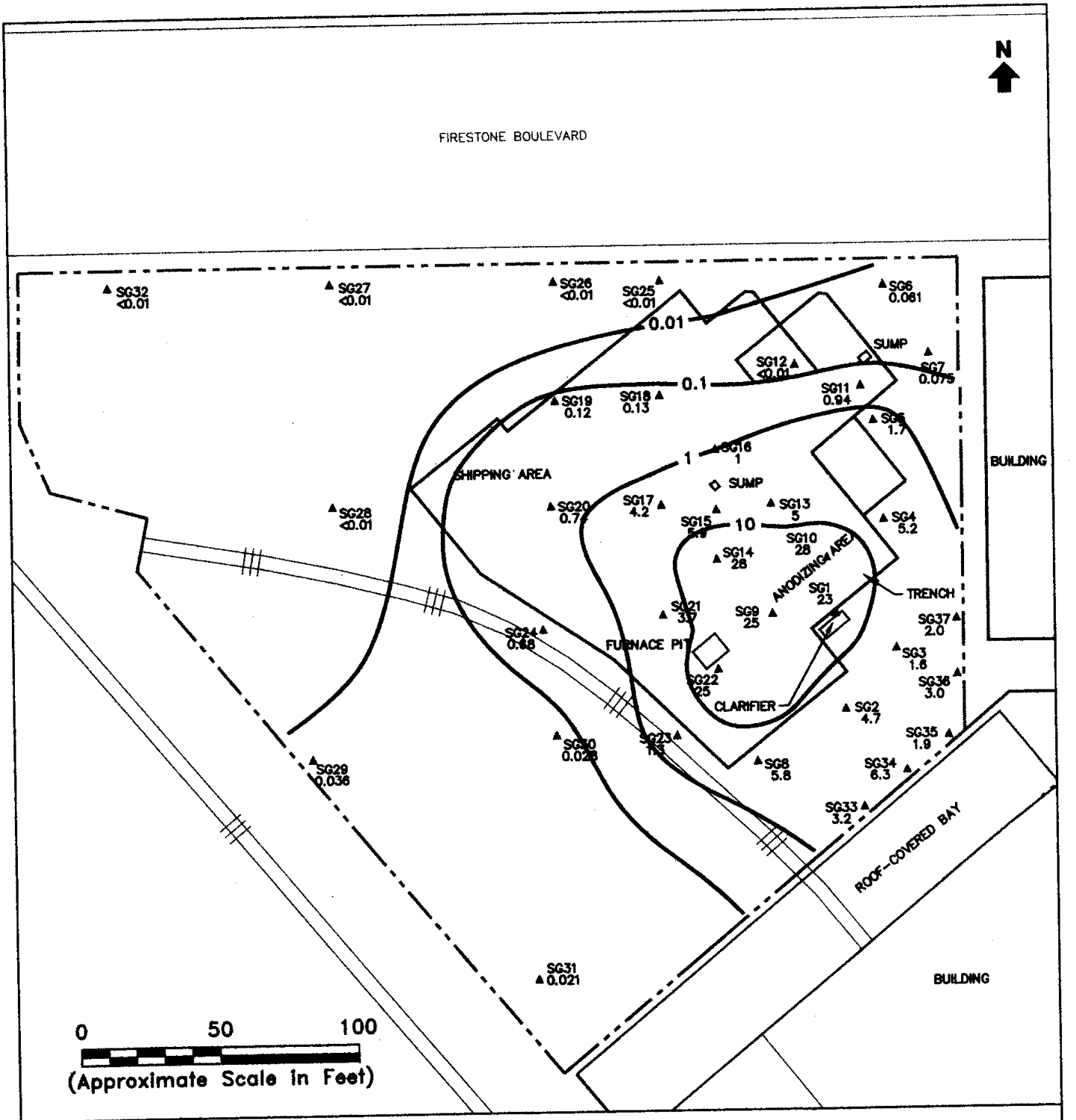
1. All locations are approximate.
2. Soil gas concentration contours in units of micrograms per liter by volume in air.

Erler & Kalinowski, Inc.

Concentrations of TCE Detected in Shallow Soil Gas

Jervis B. Webb Company
South Gate, CA
February 1998
EKI 961025.02

Figure 4



LEGEND

- ▲ SOIL GAS SAMPLING LOCATION
- PROPERTY LINE/BOUNDARY
- BUILDING
- RAILROAD SPUR

Notes:

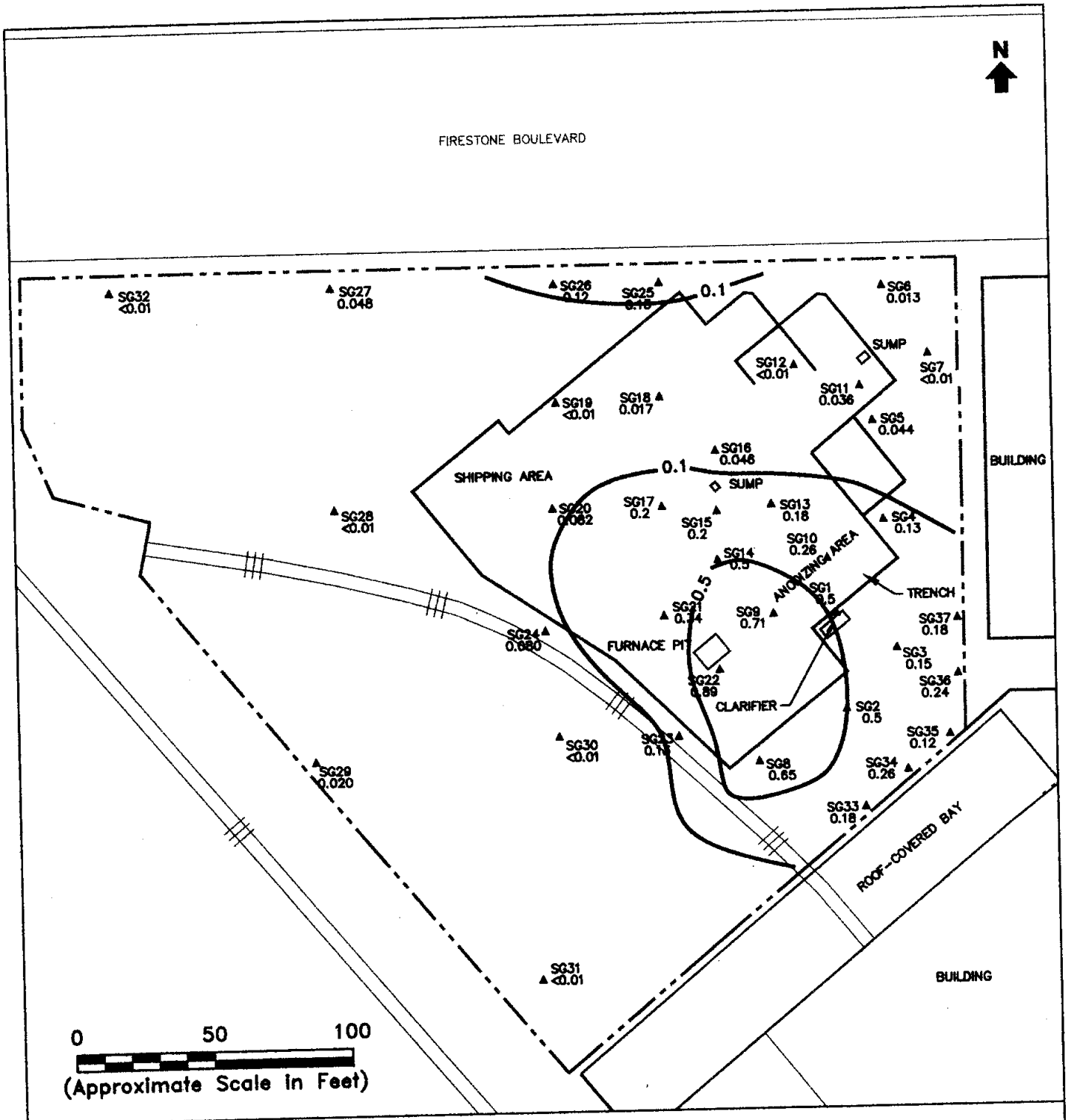
1. All locations are approximate.
2. Soil gas concentration contours in units of micrograms per liter by volume in air.

Erler & Kalinowski, Inc.

Concentrations of PCE Detected in Shallow Soil Gas

Jervis B. Webb Company
South Gate, CA
February 1998
EKI 961025.02

Figure 5



LEGEND

- ▲ SOIL GAS SAMPLING LOCATION
- PROPERTY LINE/BOUNDARY
- BUILDING
- RAILROAD SPUR

Notes:

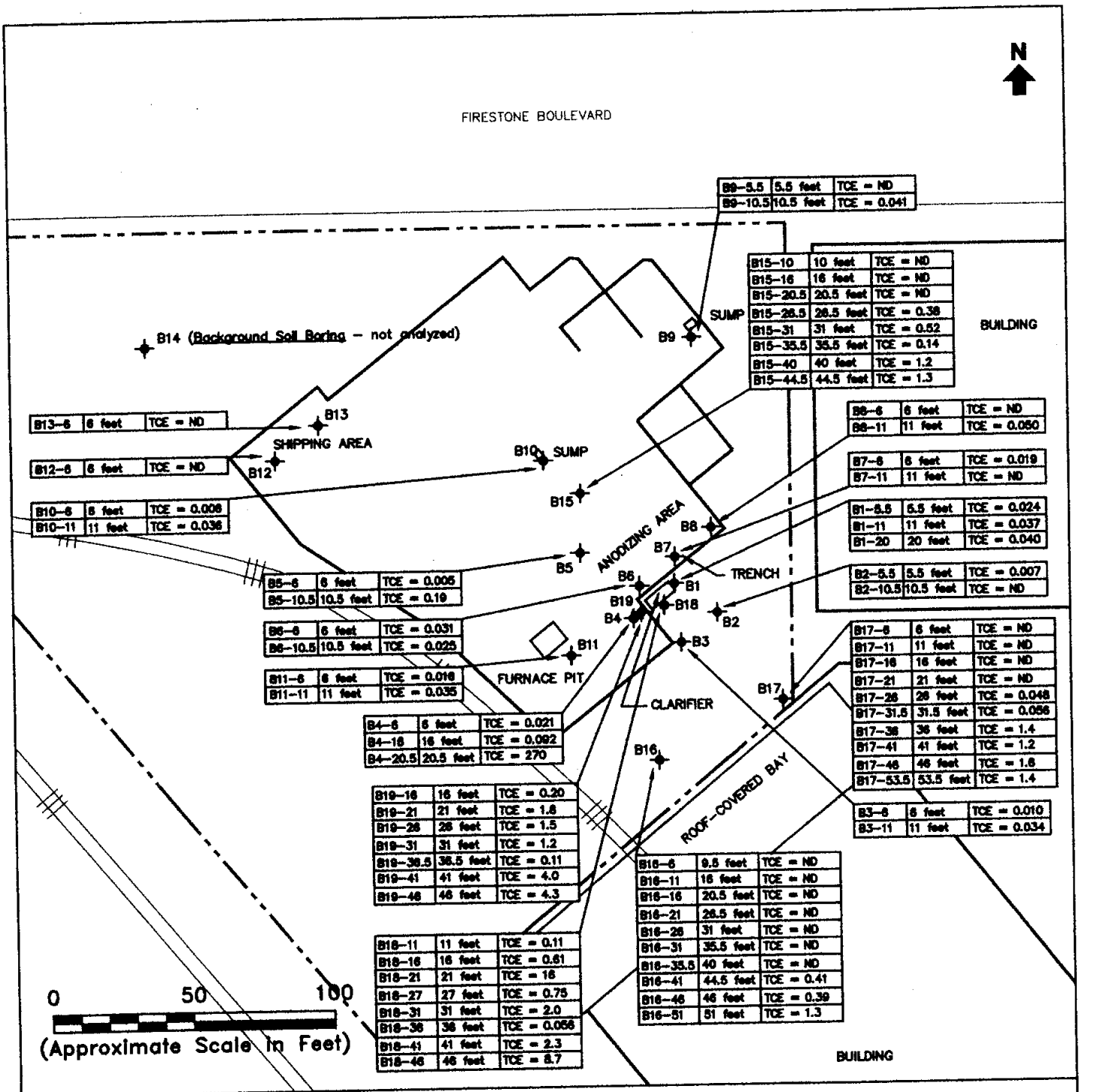
1. All locations are approximate.
2. Soil gas concentration contours in units of micrograms per liter by volume in air.

Erler & Kalinowski, Inc.

Concentrations of 1,1,1-TCA Detected in Shallow Soil Gas

Jervis B. Webb Company
South Gate, CA
February 1998
EKI 961025.02

Figure 6



B9–5.5	5.5 feet	TCE = ND
B9–10.5	10.5 feet	TCE = 0.041

B15–10	10 feet	TCE = ND
B15–16	16 feet	TCE = ND
B15–20.5	20.5 feet	TCE = ND
B15–26.5	26.5 feet	TCE = 0.38
B15–31	31 feet	TCE = 0.52
B15–35.5	35.5 feet	TCE = 0.14
B15–40	40 feet	TCE = 1.2
B15–44.5	44.5 feet	TCE = 1.3

B13–6	6 feet	TCE = ND
B12–6	6 feet	TCE = ND

B10–6	6 feet	TCE = 0.008
B10–11	11 feet	TCE = 0.036

B8–6	6 feet	TCE = ND
B8–11	11 feet	TCE = 0.050

B7–6	6 feet	TCE = 0.019
B7–11	11 feet	TCE = ND

B1–5.5	5.5 feet	TCE = 0.024
B1–11	11 feet	TCE = 0.037
B1–20	20 feet	TCE = 0.040

B2–5.5	5.5 feet	TCE = 0.007
B2–10.5	10.5 feet	TCE = ND

B5–6	6 feet	TCE = 0.005
B5–10.5	10.5 feet	TCE = 0.19

B6–6	6 feet	TCE = 0.031
B6–10.5	10.5 feet	TCE = 0.025

B11–6	6 feet	TCE = 0.016
B11–11	11 feet	TCE = 0.035

B4–6	6 feet	TCE = 0.021
B4–16	16 feet	TCE = 0.092
B4–20.5	20.5 feet	TCE = 270

B17–6	6 feet	TCE = ND
B17–11	11 feet	TCE = ND
B17–16	16 feet	TCE = ND
B17–21	21 feet	TCE = ND
B17–26	26 feet	TCE = 0.048
B17–31.5	31.5 feet	TCE = 0.056
B17–36	36 feet	TCE = 1.4
B17–41	41 feet	TCE = 1.2
B17–46	46 feet	TCE = 1.8
B17–53.5	53.5 feet	TCE = 1.4

B3–6	6 feet	TCE = 0.010
B3–11	11 feet	TCE = 0.034

B19–16	16 feet	TCE = 0.20
B19–21	21 feet	TCE = 1.8
B19–26	26 feet	TCE = 1.5
B19–31	31 feet	TCE = 1.2
B19–36.5	36.5 feet	TCE = 0.11
B19–41	41 feet	TCE = 4.0
B19–46	46 feet	TCE = 4.3

B18–6	9.5 feet	TCE = ND
B18–11	16 feet	TCE = ND
B18–16	20.5 feet	TCE = ND
B18–21	26.5 feet	TCE = ND
B18–26	31 feet	TCE = ND
B18–31	35.5 feet	TCE = ND
B18–35.5	40 feet	TCE = ND
B18–41	44.5 feet	TCE = 0.41
B18–46	46 feet	TCE = 0.39
B18–51	51 feet	TCE = 1.3

B18–11	11 feet	TCE = 0.11
B18–16	16 feet	TCE = 0.61
B18–21	21 feet	TCE = 16
B18–27	27 feet	TCE = 0.75
B18–31	31 feet	TCE = 2.0
B18–36	36 feet	TCE = 0.056
B18–41	41 feet	TCE = 2.3
B18–46	46 feet	TCE = 8.7

LEGEND

- LOCATION OF SOIL BORING
- PROPERTY LINE/BOUNDARY
- BUILDING
- RAILROAD SPUR

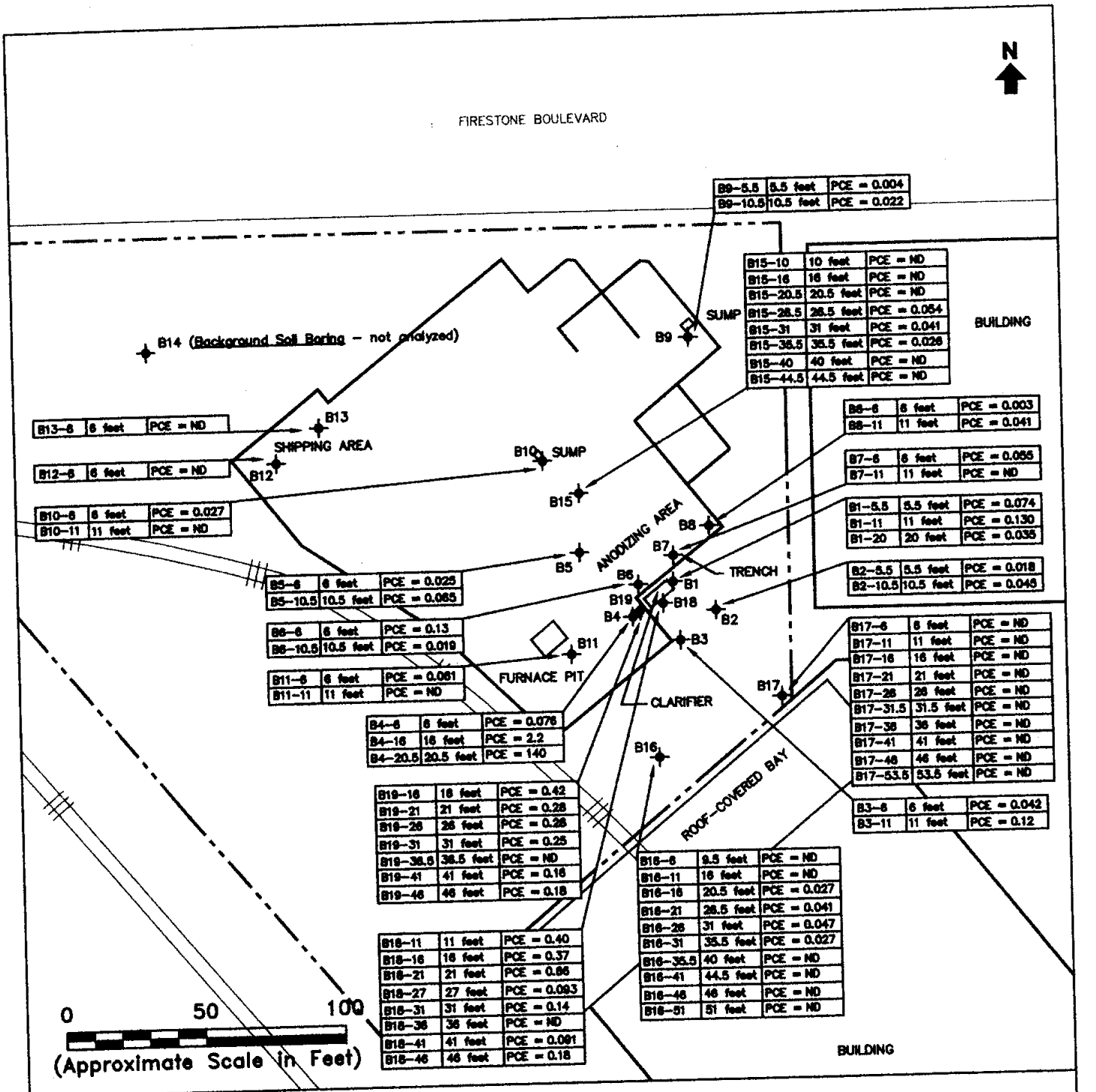
Notes:

1. All locations are approximate.
2. Soil boring B4 installed at approximately 15 degrees angle from vertical in the direction of the base of the clarifier. Boring terminated beneath the clarifier.
3. See laboratory report for results of additional analyses.
4. Concentrations of volatile organic compounds ("VOCs") reported in units of micrograms per kilogram. Concentrations shown in units of milligrams per kilogram ("mg/kg"). "ND" indicates non-detection above method detection limits. Some concentrations rounded to nearest 0.001 mg/kg.

Erler & Kalinowski, Inc.

Concentrations of TCE Detected in Soil

Jervis B. Webb Company
South Gate, CA
February 1998
EKI 961025.02
Figure 7



LEGEND

- LOCATION OF SOIL BORING
- PROPERTY LINE/BOUNDARY
- BUILDING
- RAILROAD SPUR

Notes:

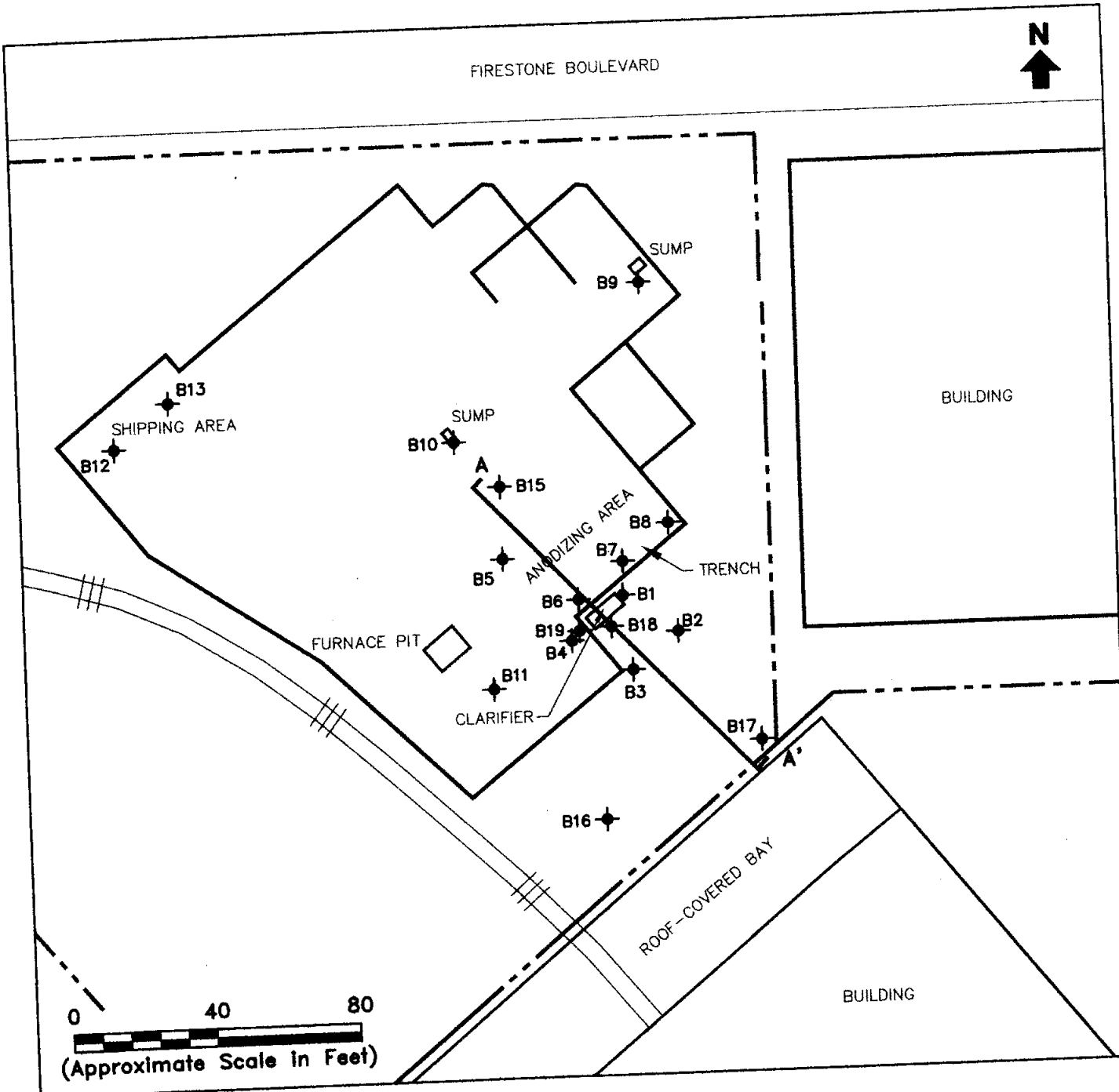
1. All locations are approximate.
2. Soil boring B4 installed at approximately 15 degrees angle from vertical in the direction of the base of the clarifier. Boring terminated beneath the clarifier.
3. See laboratory report for results of additional analyses.
4. Concentrations of volatile organic compounds ("VOCs") reported in units of micrograms per kilogram. Concentrations shown in units of milligrams per kilogram ("mg/kg"). "ND" indicates non-detection above method detection limits. Some concentrations rounded to nearest 0.001 mg/kg.

Erler & Kalinowski, Inc.

Concentrations of PCE Detected in Soil

Jervis B. Webb Company
South Gate, CA
February 1998
EKI 961025.02

Figure 8



LEGEND

- LOCATION OF SOIL BORING
- PROPERTY LINE/BOUNDARY
- BUILDING
- RAILROAD SPUR

Erler & Kalinowski, Inc.

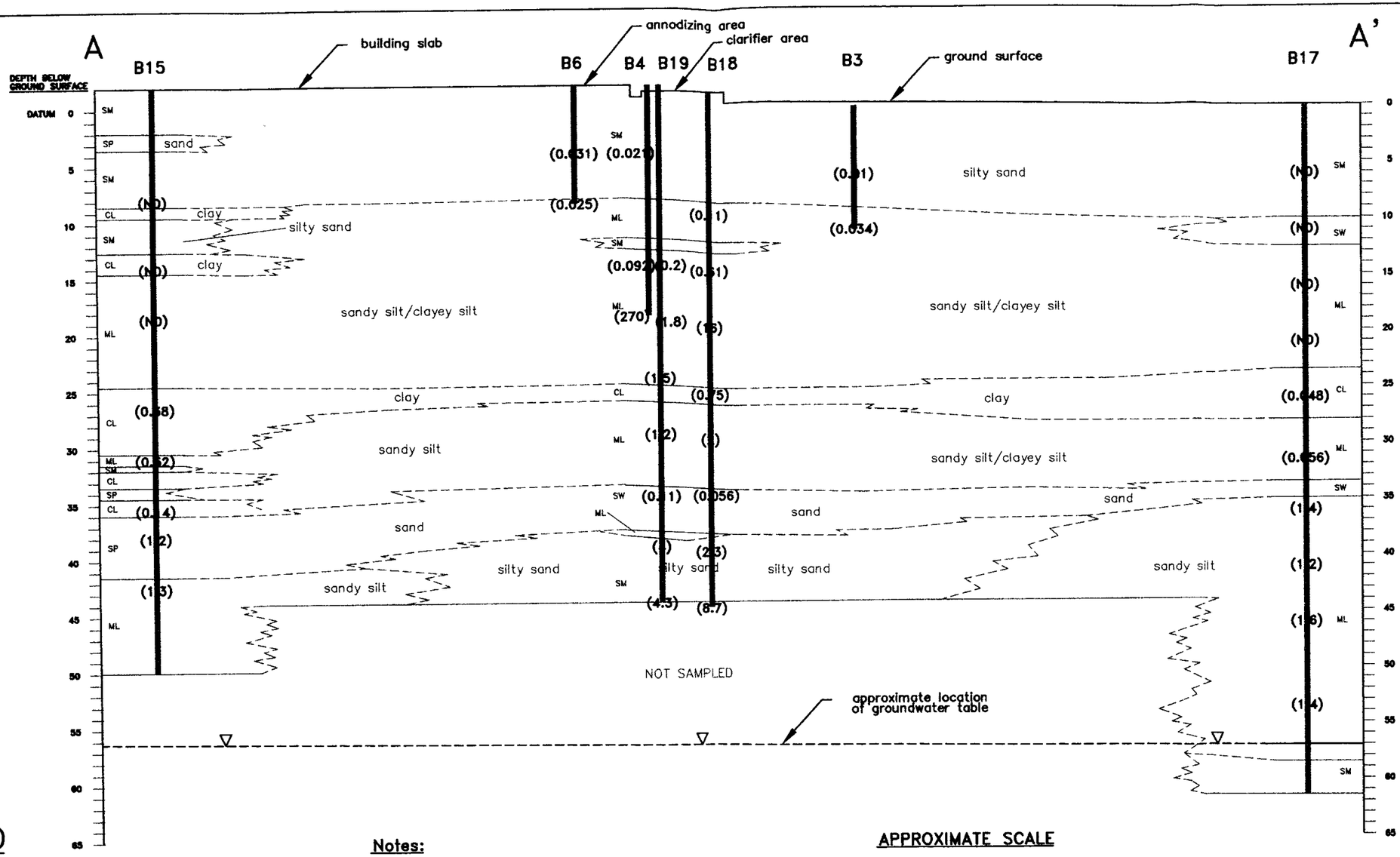
Plan Map Showing Deep Soil Cross Section Through Clarifier Area

Jervis B. Webb Co.
South Gate, CA
February 1998
EKI 961025.02

Figure 9

Notes:

1. All locations are approximate.



LEGEND

(8.7)	Concentration of TCE Detected in Sample of Soil (depth of sample indicated)
————	Lithologic Contact
- - - - - -	Inferred Lithologic Contact
----▽----	Approximate Location of Static Groundwater Table
silty sand	General Soil Type
ML	USCS Soil Classification (see Appendix B)

Notes:

1. All locations are approximate.
2. All concentrations shown in units of milligrams per kilogram.
3. See Appendix B of the report for boring logs. See Table 2 for analytical results for soil samples.

APPROXIMATE SCALE

1 inch = 10 feet

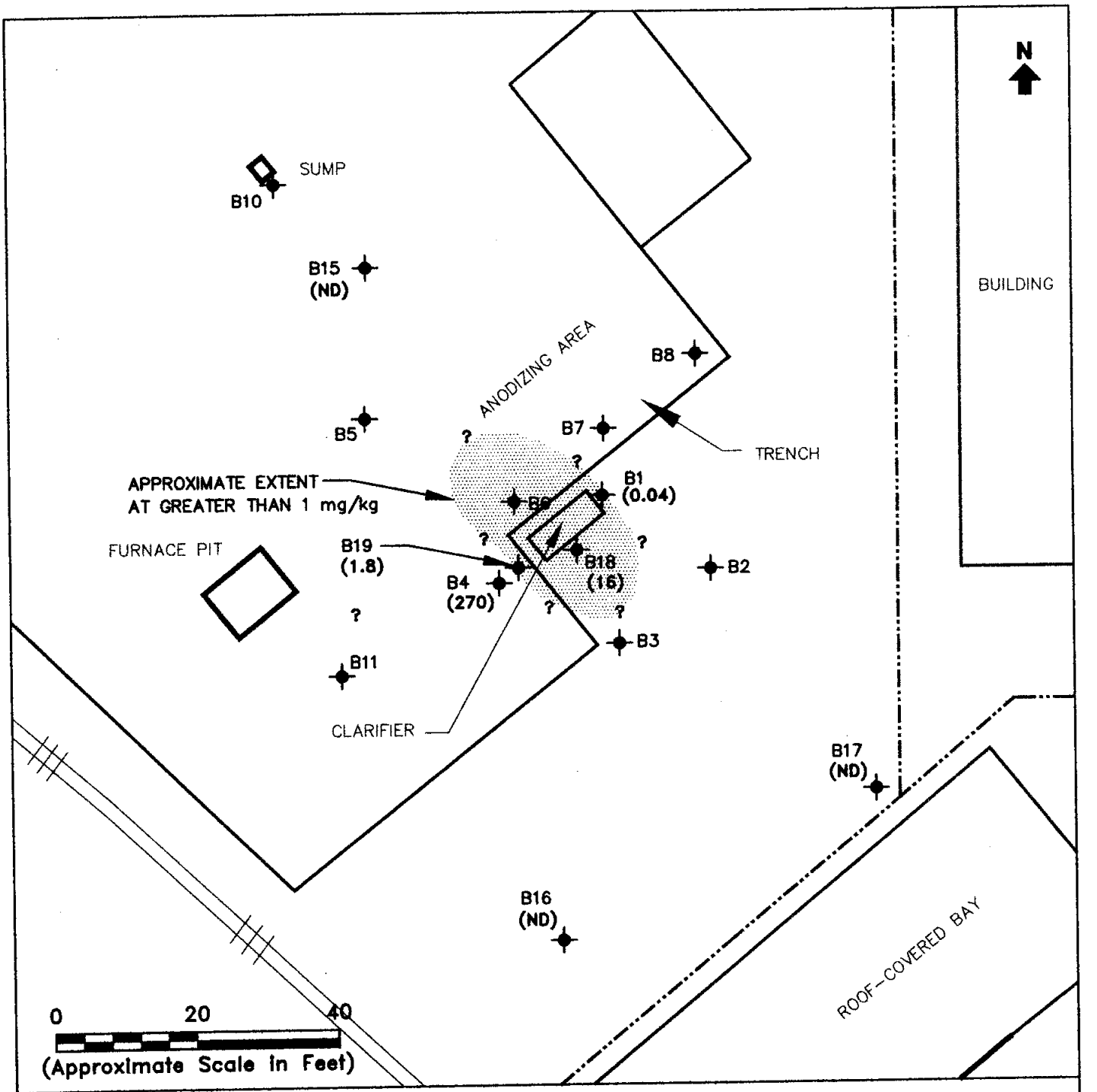
Erler & Kalinowski, Inc.

Cross Section A – A' Showing Concentration of TCE in Vadose Zone Soil

Jervis B. Webb Co.
South Gate, CA
February 1998
EKI 961025.02

Figure 10

002616



LEGEND

- LOCATION OF SOIL BORING (Not all borings sampled to 20 feet)
- PROPERTY LINE/BOUNDARY
- BUILDING
- RAILROAD SPUR

Notes:

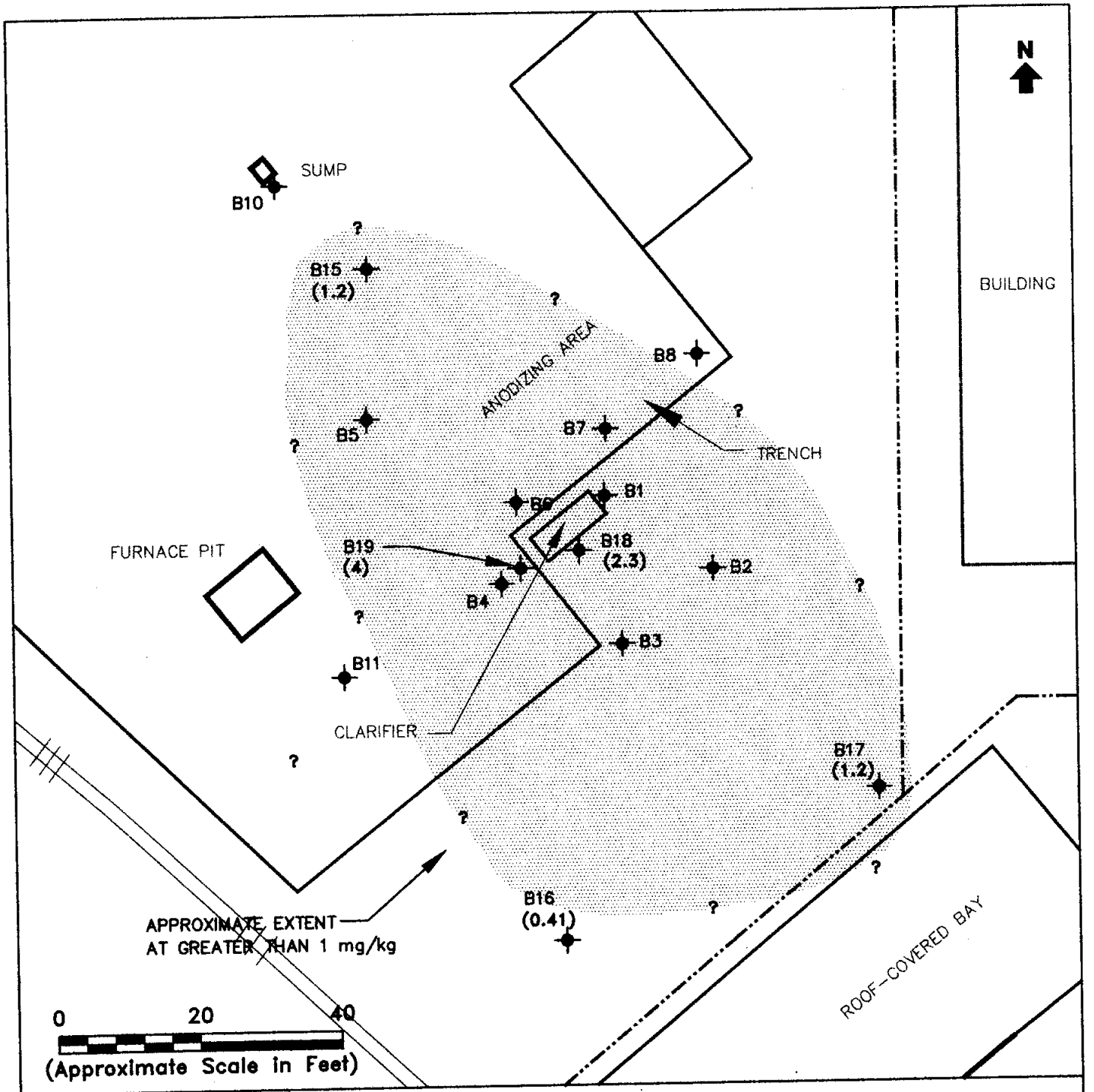
1. All locations are approximate.
2. Soil boring B4 installed at approximately 15 degrees angle from vertical in the direction of the base of the clarifier. The detected 270 mg/kg was in a sample from below the clarifier at 20 feet below ground surface.
3. See laboratory report for results of additional analyses.
4. Concentrations of volatile organic compounds ("VOCs") shown in units of milligrams per kilogram ("mg/kg"). "ND" indicates non-detection above method detection limits. Some concentrations rounded to nearest 0.001 mg/kg.

Erler & Kalinowski, Inc.

Approximate Lateral Extent of TCE Detected in Soil at Approximately 20 Feet Below Ground Surface

Jervis B. Webb Company
South Gate, CA
February 1998
EKI 961025.02

Figure 11



LEGEND

- LOCATION OF SOIL BORING (Not all borings sampled to 20 feet)
- PROPERTY LINE/BOUNDARY
- BUILDING
- RAILROAD SPUR

Notes:

1. All locations are approximate.
2. Soil boring B4 installed at approximately 15 degrees angle from vertical in the direction of the base of the clarifier.
3. See laboratory report for results of additional analyses.
4. Concentrations of volatile organic compounds ("VOCs") shown in units of milligrams per kilogram ("mg/kg"). "ND" indicates non-detection above method detection limits. Some concentrations rounded to nearest 0.001 mg/kg.

Erler & Kalinowski, Inc.

Approximate Lateral Extent of TCE Detected in Soil at Approximately 40 Feet Below Ground Surface

Jervis B. Webb Company
South Gate, CA
February 1998
EKI 961025.02

Figure 12

B

APPENDIX B

GROUNDWATER MONITORING DATA (FROM EKI, 26 OCTOBER 2000)

TABLE 1

Groundwater Elevations in Monitoring Wells

Quarterly Progress Report for July through September 2000

Jervis B. Webb Company of California, 5030 Firestone Boulevard, South Gate, California

Well ID	Date	Elevation of Top-of-Casing (ft msl)	Depth to Water (ft bgs)	Elevation of Water Surface (ft msl)	Comments
MW-1	2/27/98	106.09	44.79	61.30	
	3/2/98	106.09	44.82	61.27	
	3/4/98	106.09	44.58	61.51	
	4/8/98	106.09	44.57	61.52	
	5/20/98	106.09	43.99	62.10	
	10/8/98	106.09	43.38	62.71	
	11/5/98	106.09	43.14	62.95	
	12/21/98	106.09	43.37	62.72	
	1/19/99	106.09	43.26	62.83	
	2/3/99	106.09	42.98	63.11	
	3/30/99	106.09	43.22	62.87	
	6/1/99	106.09	43.48	62.61	
	7/29/99	106.09	43.82	62.27	
	9/1/99	106.09	43.76	62.33	
	9/23/99	106.09	44.03	62.06	
	10/18/99	106.09	44.43	61.66	
	12/8/99	106.09	44.55	61.54	
	1/27/00	106.09	44.40	61.69	
	2/28/00	106.09	44.34	61.75	
	3/15/00	106.09	44.06	62.03	
	4/13/00	106.09	44.73	61.36	
	5/18/00	106.09	44.58	61.51	
	6/20/00	106.09	44.60	61.49	
	7/13/00	106.09	45.17	60.92	
	8/17/00	106.09	45.30	60.79	
	9/7/00	106.09	45.15	60.94	
MW-2	2/27/98	106.65	44.02	62.63	
	3/2/98	106.65	44.06	62.59	
	3/4/98	106.65	44.13	62.52	
	4/8/98	106.65	NR	--	Truck parked on well.
	5/20/98	106.65	43.51	63.14	
	10/8/98	106.65	42.84	63.81	
	11/5/98	106.65	42.64	64.01	
	12/21/98	106.65	42.69	63.96	
	1/19/99	106.65	42.66	63.99	
	2/3/99	106.65	42.55	64.10	
	3/30/99	106.65	42.63	64.02	
	6/1/99	106.65	42.91	63.74	
	7/29/99	106.65	43.13	63.52	

TABLE 1

Groundwater Elevations in Monitoring Wells

Quarterly Progress Report for July through September 2000

Jervis B. Webb Company of California, 5030 Firestone Boulevard, South Gate, California

Well ID	Date	Elevation of Top-of-Casing (ft msl)	Depth to Water (ft bgs)	Elevation of Water Surface (ft msl)	Comments
MW-2 (cont.)	9/1/99	106.65	43.14	63.51	
	9/23/99	106.65	43.35	63.30	
	10/18/99	106.65	43.60	63.05	
	12/8/99	106.65	43.62	63.03	
	1/27/00	106.65	43.86	62.79	
	2/28/00	106.65	43.86	62.79	
	3/15/00	106.65	43.62	63.03	
	4/13/00	106.65	43.92	62.73	
	5/18/00	106.65	43.50	63.15	
	6/20/00	106.65	43.48	63.17	
	7/13/00	106.65	43.29	63.36	
	8/17/00	106.65	43.38	63.27	
	9/7/00	106.65	44.30	62.35	
MW-3	2/27/98	105.87	44.55	61.32	
	3/2/98	105.87	44.56	61.31	
	3/4/98	105.87	44.40	61.47	
	4/8/98	105.87	44.39	61.48	
	5/20/98	105.87	43.80	62.07	
	10/8/98	105.87	43.26	62.61	
	11/5/98	105.87	43.60	62.27	
	12/21/98	105.87	43.33	62.54	
	1/19/99	105.87	43.18	62.69	
	2/3/99	105.87	42.97	62.90	
	3/30/99	105.87	43.19	62.68	
	6/1/99	105.87	43.58	62.29	
	7/29/99	105.87	43.85	62.02	
	9/1/99	105.87	43.90	61.97	
	9/23/99	105.87	44.10	61.77	
	10/18/99	105.87	44.37	61.50	
	12/8/99	105.87	44.64	61.23	
	1/27/00	105.87	44.69	61.18	
	2/28/00	105.87	44.75	61.12	
	3/15/00	105.87	44.41	61.46	
	4/13/00	105.87	44.86	61.01	
	5/18/00	105.87	44.94	60.93	
	6/20/00	105.87	44.88	60.99	
	7/13/00	105.87	45.25	60.62	
	8/17/00	105.87	45.06	60.81	
	9/7/00	105.87	44.83	61.04	

TABLE 1

Groundwater Elevations in Monitoring Wells

Quarterly Progress Report for July through September 2000

Jervis B. Webb Company of California, 5030 Firestone Boulevard, South Gate, California

Well ID	Date	Elevation of Top-of-Casing (ft msl)	Depth to Water (ft bgs)	Elevation of Water Surface (ft msl)	Comments
MW-4	11/3/98	104.72	42.77	61.95	Well Developed
	11/5/98	104.72	42.64	62.08	
	12/21/98	104.72	42.93	61.79	
	1/19/99	104.72	42.80	61.92	
	2/3/99	104.72	42.63	62.09	
	3/30/99	104.72	42.89	61.83	
	6/1/99	104.72	43.28	61.44	
	7/29/99	104.72	43.63	61.09	
	9/1/99	104.72	43.70	61.02	
	9/23/99	104.72	43.96	60.76	
	10/18/99	104.72	44.22	60.50	
	12/8/99	104.72	44.48	60.24	
	1/27/00	104.72	44.70	60.02	
	2/28/00	104.72	NR	--	Truck parked on well.
	3/15/00	104.72	44.37	60.35	
	4/13/00	104.72	NR	--	Truck parked on well.
	5/18/00	104.72	44.81	59.91	
	6/20/00	104.72	44.94	59.78	
	7/13/00	104.72	45.10	59.62	
	8/17/00	104.72	45.36	59.36	
	9/7/00	104.72	45.31	59.41	
MW-5	11/3/98	106.13	43.32	62.81	Well Developed
	11/5/98	106.13	43.30	62.83	
	12/21/98	106.13	43.58	62.55	
	1/19/99	106.13	43.46	62.67	
	2/3/99	106.13	43.20	62.93	
	3/30/99	106.13	43.49	62.64	
	6/1/99	106.13	43.88	62.25	
	7/29/99	106.13	44.19	61.94	
	9/1/99	106.13	44.22	61.91	
	9/23/99	106.13	44.48	61.65	
	10/18/99	106.13	44.72	61.41	
	12/8/99	106.13	44.98	61.15	
	1/27/00	106.13	45.17	60.96	
	2/28/00	106.13	45.15	60.98	
	3/15/00	106.13	44.87	61.26	
	4/13/00	106.13	45.22	60.91	
	5/18/00	106.13	45.29	60.84	
	6/20/00	106.13	45.30	60.83	

TABLE 1

Groundwater Elevations in Monitoring Wells

Quarterly Progress Report for July through September 2000

Jervis B. Webb Company of California, 5030 Firestone Boulevard, South Gate, California

Well ID	Date	Elevation of Top-of-Casing (ft msl)	Depth to Water (ft bgs)	Elevation of Water Surface (ft msl)	Comments
MW-5 (cont.)	7/13/00	106.13	45.63	60.50	
	8/17/00	106.13	45.85	60.28	
	9/7/00	106.13	45.69	60.44	

NOTES:

ft msl = feet above mean sea level
ft bgs = feet beneath ground surface
NR = Not Recorded
-- Not Applicable

1. Monitoring well northing and easting coordinates and top-of-casing elevations for wells MW-1, MW-2, and MW-3 were surveyed on 6 March 1998 by Rattray & Associates, Inc.
2. Monitoring well northing and easting coordinates and top-of-casing elevations for wells MW-4 and MW-5 were surveyed on 21 December 1998 by Rattray & Associates, Inc.

TABLE 2
Analytical Results for Groundwater Samples
Quarterly Progress Report for July through September 2000

Jervis B. Webb Company of California, 5030 Firestone Boulevard, South Gate, California

Well ID	Sample Number	Sample Date	Analyte Concentration									
			Benzene (ug/L)	Toluene (ug/L)	1,1-DCA (ug/L)	1,1-DCE (ug/L)	1,2-DCA (ug/L)	c-1,2-DCE (ug/L)	t-1,2-DCE (ug/L)	PCE (ug/L)	TCE (ug/L)	TDS (mg/L)
MW-1	MW-1-0304	3/4/98	<100	<100	<100	220	<100	130	<100	140	24,000	--
	MW-1-0304DUP	3/4/98	<100	<100	<100	210	<100	150	<100	160	25,000	--
	MW-1-0520	5/20/98	<125	<125	<125	160	<125	130	<125	<125	24,000	1,500
	MW-1	11/5/98	<125	<125	<125	140	<125	160	<125	170	28,000	--
	MW-1	2/3/99	<125	<125	<125	130	<125	160	<125	160	27,000	--
	MW-1	6/1/99	<100	<100	<100	140	<100	190	<100	160	28,000	--
	MW-1	9/1/99	<100	<100	140	220	<100	200	<100	190	32,000	--
	MW-1	12/8/99	<250	<250	<250	<250	<250	<250	<250	<250	30,000	--
	MW-1-A[3]	12/8/99	<100	<100	110	150	<100	200	<100	160	33,000	--
	MW-1	3/15/00	<100	<100	<100	160	<100	230	<100	150	30,000	--
	MW-1	6/20/00	<100	<100	<100	<100	<100	<100	<100	<100	24,000	--
	MW-1	9/7/00	<100	<100	<100	<100	<100	<100	<100	<100	21,000	--
MW-2	MW-2-0304	3/4/98	<10	<10	13	34	<10	65	<10	<10	2,700	--
	MW-2-0520	5/20/98	<10	<10	14	38	<10	68	<10	<10	3,000	2,500
	MW-2	11/5/98	<10	<10	13	36	<10	68	<10	<10	3,200	--
	MW-2	2/3/99	<10	<10	13	36	<10	70	<10	<10	3,200	--
	MW-2	6/1/99	<10	<10	12	34	<10	68	<10	<10	2,800	--
	MW-2	9/1/99	<10	<10	16	49	<10	72	<10	<10	3,100	--
	MW-2	12/8/99	<13	<13	<13	<13	<13	57	<13	<13	2,400	--
	MW-2-A[3]	12/8/99	<10	<10	12	22	<10	63	<10	<10	2,600	--
	MW-2	3/15/00	<10	<10	<10	<10	<10	74	<10	<10	2,800	--
	MW-2	6/20/00	<10	<10	<10	<10	<10	46	<10	<10	2,000	--
	MW-2	9/7/00	<10	<10	<10	<10	<10	42	<10	<10	1,800	--

002625

TABLE 2
Analytical Results for Groundwater Samples

Quarterly Progress Report for July through September 2000

Jervis B. Webb Company of California, 5030 Firestone Boulevard, South Gate, California

Well ID	Sample Number	Sample Date	Analyte Concentration									
			Benzene (ug/L)	Toluene (ug/L)	1,1-DCA (ug/L)	1,1-DCE (ug/L)	1,2-DCA (ug/L)	c-1,2-DCE (ug/L)	t-1,2-DCE (ug/L)	PCE (ug/L)	TCE (ug/L)	TDS (mg/L)
MW-3	MW-3-0304	3/4/98	<10	13	14	82	<10	200	<10	<10	2,800	--
	MW-3-0520	5/20/98	<10	<10	13	58	<10	230	15	<10	2,800	1,100
	MW-3	11/5/98	<10	<10	11	66	<10	240	18	<10	2,300	--
	MW-3	2/3/99	<10	<10	11	64	<10	220	18	<10	2,000	--
	MW-3	6/1/99	<10	<10	11	66	53	240	18	<10	1,900	--
	MW-3	9/1/99	<10	<10	13	80	<10	270	20	<10	2,600	--
	MW-3	12/8/99	<13	<13	<13	<13	<13	220	<13	<13	2,500	--
	MW-3-A[3]	12/8/99	<10	<10	13	55	<10	240	19	<10	2,900	--
	MW-3	3/15/00	<10	<10	11	61	<10	300	20	<10	3,100	--
	MW-3	6/20/00	<10	<10	10	<10	<10	170	14	<10	1,900	--
	MW-3-DUP	6/20/00	<10	<10	11	<10	<10	200	16	<10	2,100	--
	MW-3	9/7/00	<10	<10	<10	<10	<10	160	<10	<10	1,700	--
	MW-3-DUP	9/7/00	<10	<10	<10	<10	<10	160	<10	<10	1,700	--
MW-4	MW-4	11/5/98	<0.5	<0.5	<0.5	<0.5	<0.5	0.67	<0.5	<0.5	6.7	--
	MW-4	2/3/99	<0.5	<0.5	<0.5	<0.5	2.1	<0.5	<0.5	<0.5	<0.5	--
	MW-4	6/1/99	<0.5	<0.5	<0.5	<0.5	65	1.1	<0.5	<0.5	0.90	--
	MW-4	9/1/99	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--
	MW-4	12/8/99	1.2	<0.5	<0.5	<0.5	<0.5	4.1	1.0	<0.5	17	--
	MW-4-A[3]	12/8/99	1.2	<0.5	<0.5	<0.5	<0.5	4.6	1.1	<0.5	18	--
	MW-4	3/15/00	77	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.68	--
	MW-4	6/20/00	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--
	MW-4	9/7/00	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--

TABLE 2
Analytical Results for Groundwater Samples

Quarterly Progress Report for July through September 2000

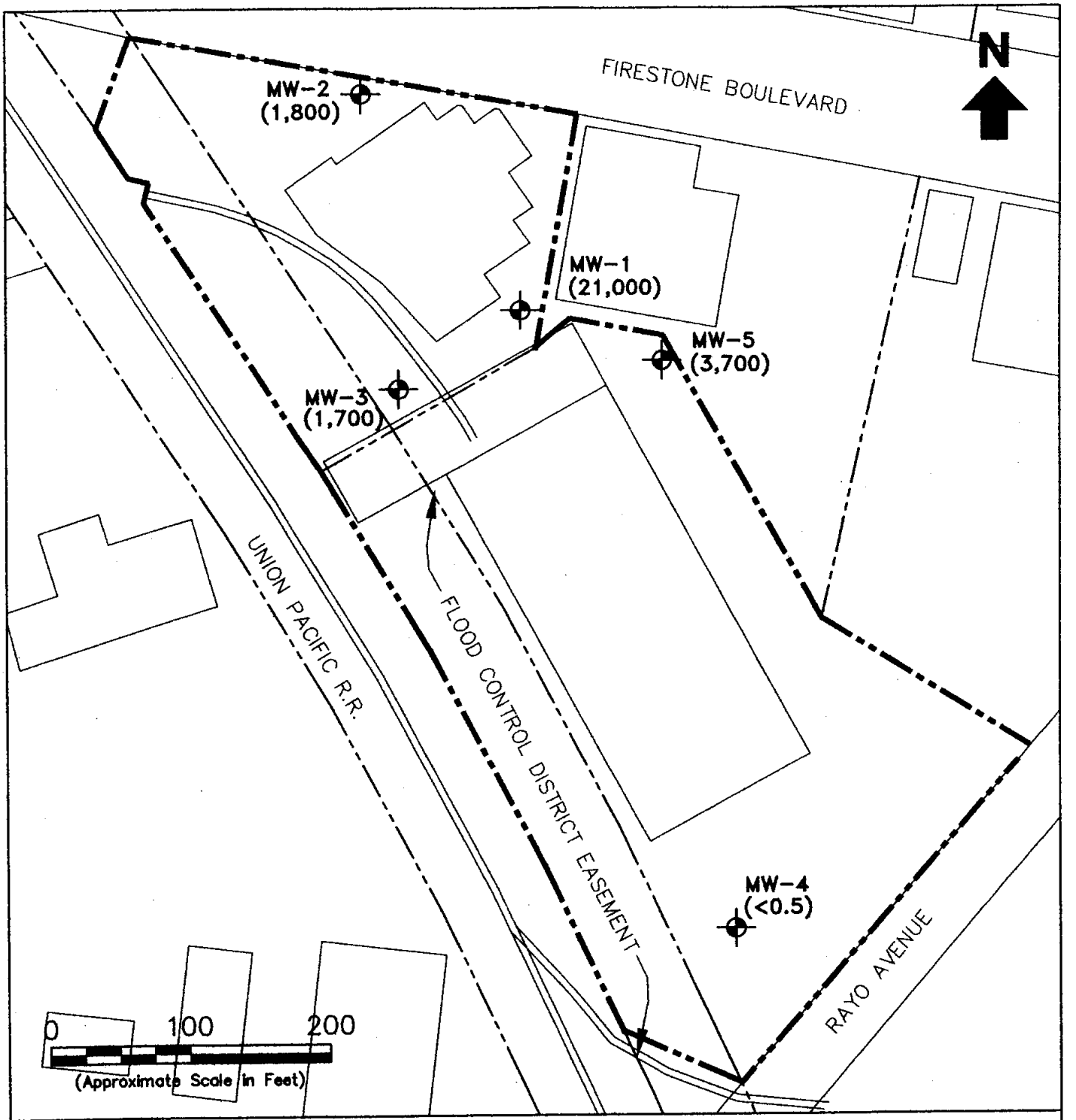
Jervis B. Webb Company of California, 5030 Firestone Boulevard, South Gate, California

Well ID	Sample Number	Sample Date	Analyte Concentration									
			Benzene (ug/L)	Toluene (ug/L)	1,1-DCA (ug/L)	1,1-DCE (ug/L)	1,2-DCA (ug/L)	c-1,2-DCE (ug/L)	t-1,2-DCE (ug/L)	PCE (ug/L)	TCE (ug/L)	TDS (mg/L)
MW-5	MW-5	11/5/98	<25	<25	<25	**42**	<25	**380**	**30**	<25	**5,000**	--
	MW-5-DUP	11/5/98	<25	<25	<25	**40**	<25	**360**	**29**	<25	**4,800**	--
	MW-5	2/3/99	<25	<25	<25	**49**	<25	**420**	**35**	<25	**5,100**	--
	MW-5-DUP	2/3/99	<25	<25	<25	**45**	<25	**370**	**31**	<25	**4,500**	--
	MW-5	6/1/99	<25	<25	<25	**52**	**35**	**420**	**36**	<25	**5,500**	--
	MW-5-DUP	6/1/99	<25	<25	<25	**56**	**39**	**430**	**35**	<25	**5,300**	--
	MW-5	9/1/99	<25	<25	<25	**40**	<25	**420**	**45**	<25	**5,500**	--
	MW-5-DUP	9/1/99	<25	<25	<25	**69**	<25	**440**	**45**	<25	**6,000**	--
	MW-5	12/8/99	<50	<50	<50	<50	<50	**390**	<50	<50	**5,100**	--
	MW-5-A[3]	12/8/99	<25	<25	<25	<25	<25	**410**	**25**	<25	**5,300**	--
	MW-5-DUP	12/8/99	<50	<50	<50	<50	<50	**360**	<50	<50	**5,000**	--
	MW-5-DUP-A[3]	12/8/99	<25	<25	<25	<25	<25	**410**	**26**	<25	**5,300**	--
	MW-5	3/15/00	<50	<50	<50	<50	<50	**440**	<50	<50	**5,500**	--
	MW-5-DUP	3/15/00	<50	<50	<50	<50	<50	**450**	<50	<50	**5,800**	--
	MW-5	6/20/00	<25	<25	<25	<25	<25	**350**	<25	<25	**4,400**	--
	MW-5	9/7/00	<10	<10	<10	<10	<10	**280**	<10	<10	**3,700**	--

NOTES:

1,1-DCA = 1,1-dichloroethane
1,1-DCE = 1,1-dichloroethene
1,2-DCA = 1,2-dichloroethane
c-1,2-DCE = cis-1,2-dichloroethene
t-1,2-DCE = trans-1,2-dichloroethene
PCE = tetrachloroethene
TCE = trichloroethene
TDS = total dissolved solids
VOCs = volatile organic compounds
mg/l = milligrams per liter
ug/l = micrograms per liter
-- indicates not analyzed

1. Analyses performed by Orange Coast Analytical, Inc., in Tustin, California, using EPA Method 8260 for VOCs and EPA Method 160.1 for TDS.
2. < indicates that the analyte was not detected at a concentration above the indicated method detection limit.
3. Samples collected on 8 December 1999 were initially analyzed on 9 December 1999 and were re-analyzed on 17 December 1999 in an attempt to achieve lower method detection limits.



LEGEND

Property Line/Site Boundary

Groundwater Monitoring Well

Notes:

1. All locations are approximate.
2. Groundwater samples were collected on 7 September 2000.
3. Concentrations shown in units of micrograms per liter.

Erler & Kalinowski, Inc.

Concentrations of Trichloroethene Detected in Groundwater Samples

Jervis B. Webb Company of California
South Gate, California
October 2000
EKI 991103.01

Figure 6

C

ATTACHMENT C

ANALYTICAL DATA FOR PIPP GROUNDWATER SAMPLES (FROM EKI, 13 JANUARY 1999)

TABLE 4

Analytical Results for Direct-Push Groundwater Samples

Additional Groundwater Investigation and Quarterly Monitoring Report for October to December 1998

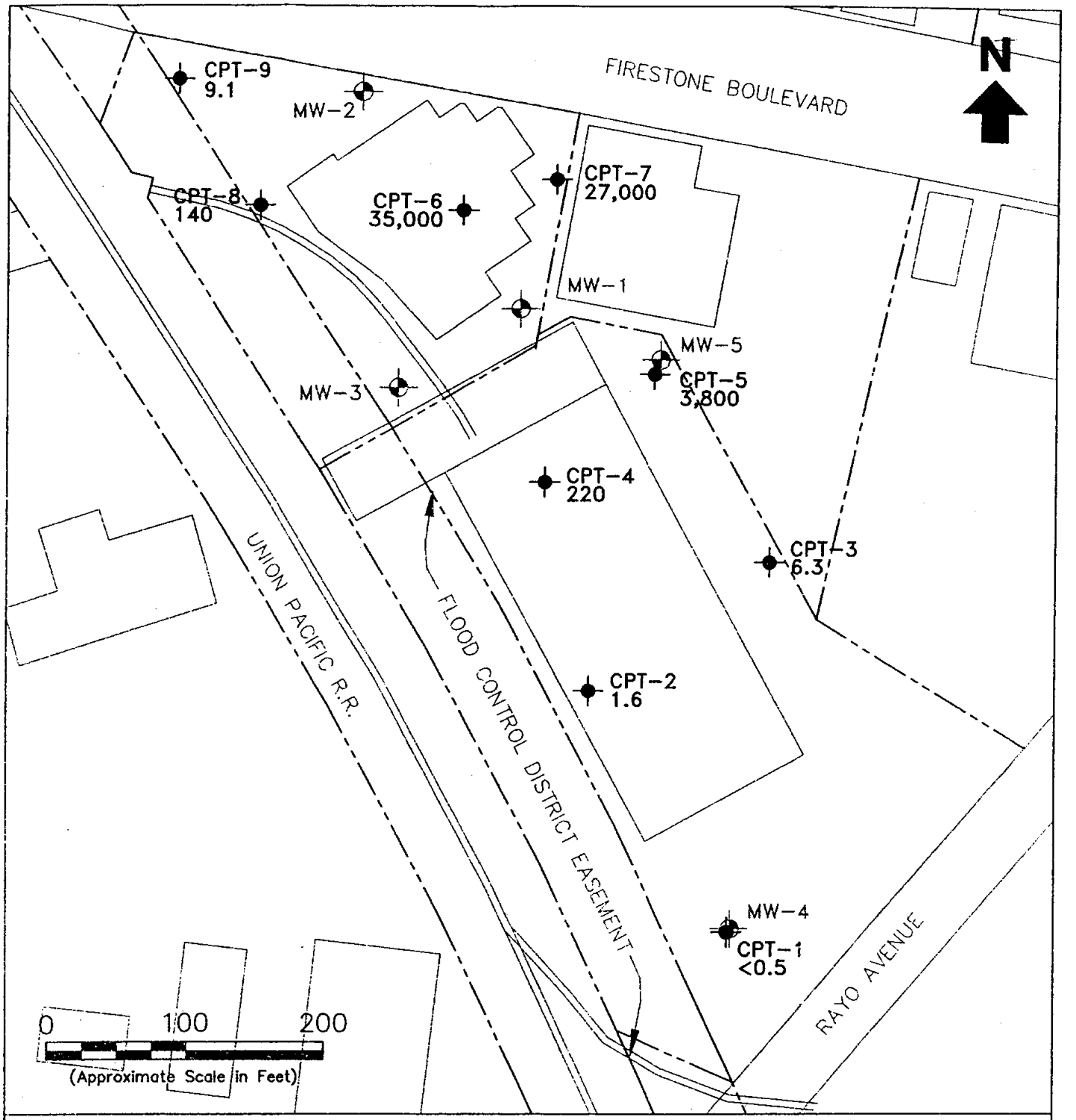
Jervis B. Webb Company, 5030 Firestone Boulevard, South Gate, California

PIPP Location	Sample Date	Depth (ft bgs)	Volatile Organic Compounds - EPA Method 8260 (ug/L)											
			Acetone	MEK	Benzene	Toluene	Xylenes	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE
CPT-1	10/1/98	55	**170**	**4.6**	**1.6**	<0.5	**1.6**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CPT-1	10/1/98	95	**8.1**	<1	<0.5	<0.5	<0.5	<0.5	**5.3**	<0.5	<0.5	<0.5	<0.5	<0.5
CPT-2	10/1/98	55	**300**	**3.5**	<1	**1.1**	<1	<1	<1	<1	<1	<1	<1	**1.6**
CPT-3	10/1/98	55	**170**	**2.7**	**0.58**	**0.55**	**0.66**	<0.5	<0.5	<0.5	**2.6**	<0.5	<0.5	**6.3**
CPT-4A	10/1/98	55	**95**	**2.2**	<1	**1.1**	**1.2**	**1.2**	<1	**4.1**	**11**	<1	<1	**220**
CPT-4B	10/1/98	55	**80**	**8.4**	<1	<1	<1	**1.1**	<1	**3.4**	**10**	<1	<1	**200**
CPT-5	10/1/98	55	**480**	<25	<13	<13	<13	<13	<13	<13	**110**	<13	<13	**3,800**
CPT-6	10/2/98	55	<400	<200	<100	<100	<100	**240**	<100	<100	**130**	<100	**110**	**35,000**
CPT-7	10/2/98	55	<500	<250	<125	<125	<125	**160**	<125	<125	**190**	<125	<125	**27,000**
CPT-8	10/2/98	55	**16**	<1	<0.5	<0.5	<0.5	**1.4**	<0.5	**6.7**	**11**	**1.3**	<0.5	**140**
CPT-9	10/2/98	55	**490**	**7.7**	<1	<1	<1	<1	<1	<1	<1	<1	<1	**9.1**
California MCL			none	none	1	150	1,750	5	0.5	6	6	10	5	5

NOTES: Abbreviations:

PIPP = Push-In Plastic Piezometer
ft bgs = feet below ground surface
ug/L = micrograms per liter
MEK = Methyl ethyl ketone (2-butanone)
Xylenes = Total xylenes
1,1-DCA = 1,1-Dichloroethane
1,2-DCA = 1,2-Dichloroethane
1,1-DCE = 1,1-Dichloroethene
c-1,2-DCE = cis-1,2-Dichloroethene
t-1,2-DCE = trans-1,2-Dichloroethene
PCE = Tetrachloroethene
TCE = Trichloroethene

1. Sample CPT-4B is a duplicate of sample CPT-4A.
2. Chemical analyses were performed by Orange Coast Analytical, Inc. in Tustin, California
3. California maximum contaminant levels ("MCLs") are as reported in the Drinking Water Standards and Health Advisories Table by U.S. EPA Region IX, dated June 1998. "none" indicates that no MCL (California or federal) has been established.



LEGEND

- PIPP Groundwater Sample Location
- Groundwater Monitoring Well
- Property Line/Boundary

Erler & Kalinowski, Inc.

Concentrations of Trichloroethene Detected in PIPP Groundwater Samples

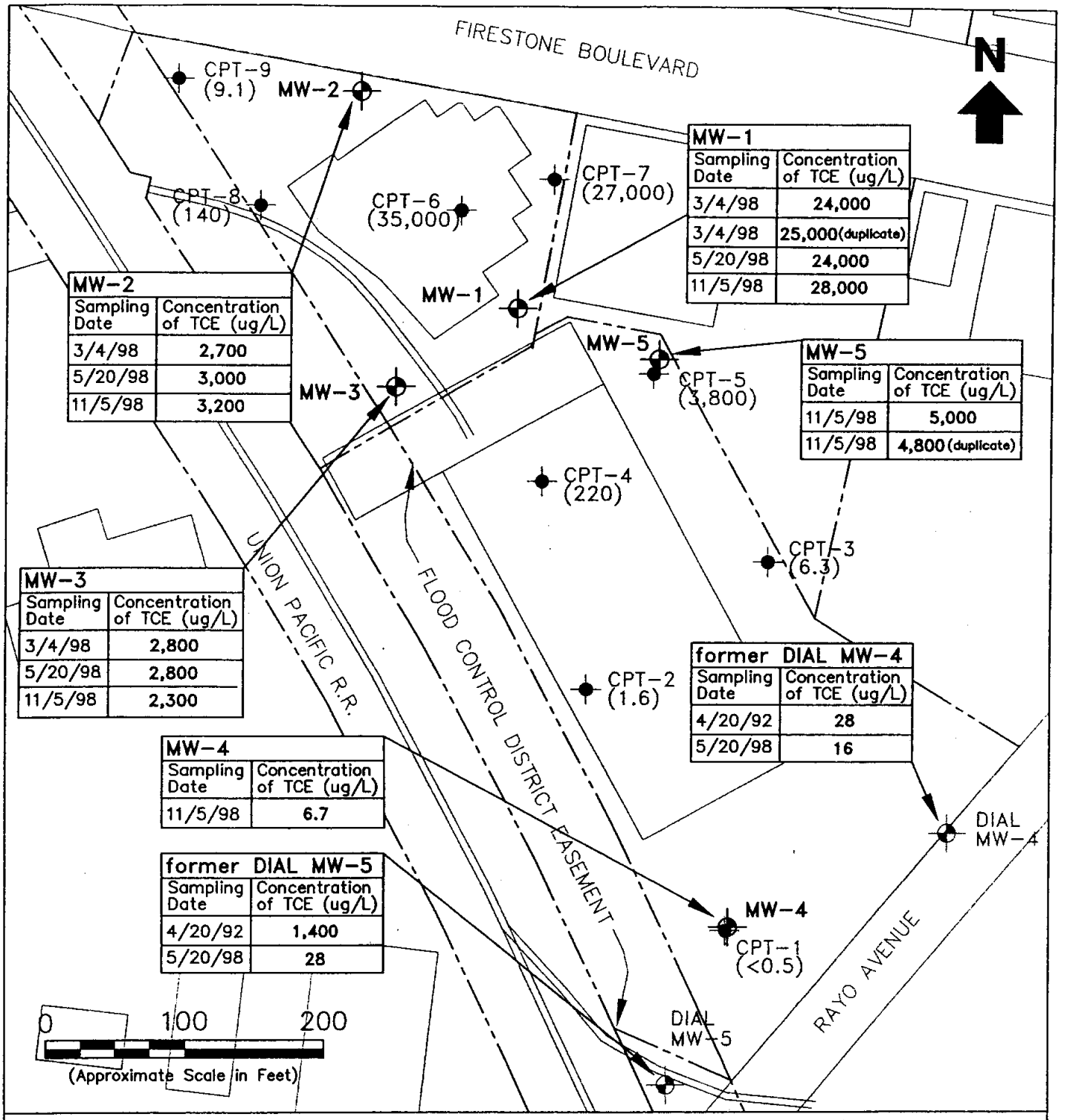
Jervis B. Webb Company
South Gate, California

January 1999
EKI 961025.02

Figure 6

Notes:

1. All locations are approximate.
2. Concentrations shown in units of micrograms per liter.



MW-1	
Sampling Date	Concentration of TCE (ug/L)
3/4/98	24,000
3/4/98	25,000 (duplicate)
5/20/98	24,000
11/5/98	28,000

MW-2	
Sampling Date	Concentration of TCE (ug/L)
3/4/98	2,700
5/20/98	3,000
11/5/98	3,200

MW-5	
Sampling Date	Concentration of TCE (ug/L)
11/5/98	5,000
11/5/98	4,800 (duplicate)

MW-3	
Sampling Date	Concentration of TCE (ug/L)
3/4/98	2,800
5/20/98	2,800
11/5/98	2,300

former DIAL MW-4	
Sampling Date	Concentration of TCE (ug/L)
4/20/92	28
5/20/98	16

MW-4	
Sampling Date	Concentration of TCE (ug/L)
11/5/98	6.7

former DIAL MW-5	
Sampling Date	Concentration of TCE (ug/L)
4/20/92	1,400
5/20/98	28

LEGEND

Groundwater Monitoring Well

CPT-4 (220) PIPP Groundwater Sample Location with TCE Concentration from PIPP Sample

Property Line/Boundary

Notes:

1. All locations are approximate.
2. Groundwater sampling at former Dial Corporation wells MW-4 and MW-5 performed by Emcon on 20 April 1992 and Erler & Kalinowski on 20 May 1998.
3. PIPP samples of groundwater collected on 1 and 2 October 1998.
   TCE = trichloroethene ug/L = micrograms per liter

Erler & Kalinowski, Inc.

Concentrations of Trichloroethene Detected in Monitoring Well Groundwater Samples

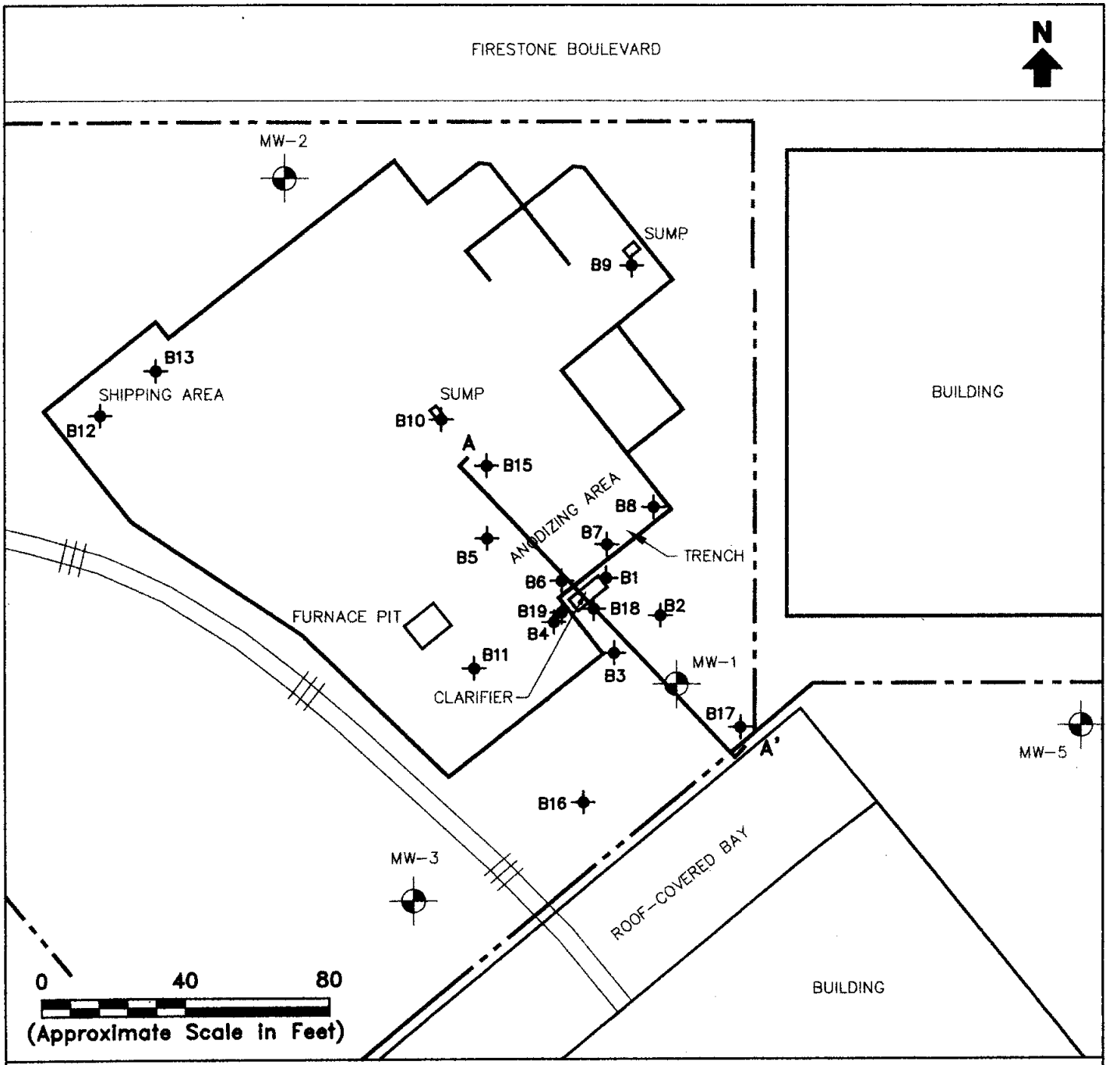
Jervis B. Webb Company
South Gate, California
January 1999
EKI 961025.02

Figure 7

D

ATTACHMENT D

CROSS SECTION OF THE SITE (FROM EKI, 14 APRIL 1999)



LEGEND

- LOCATION OF SOIL BORING
- GROUNDWATER MONITORING WELL
- PROPERTY LINE/BOUNDARY
- BUILDING
- RAILROAD SPUR

Erler & Kalinowski, Inc.

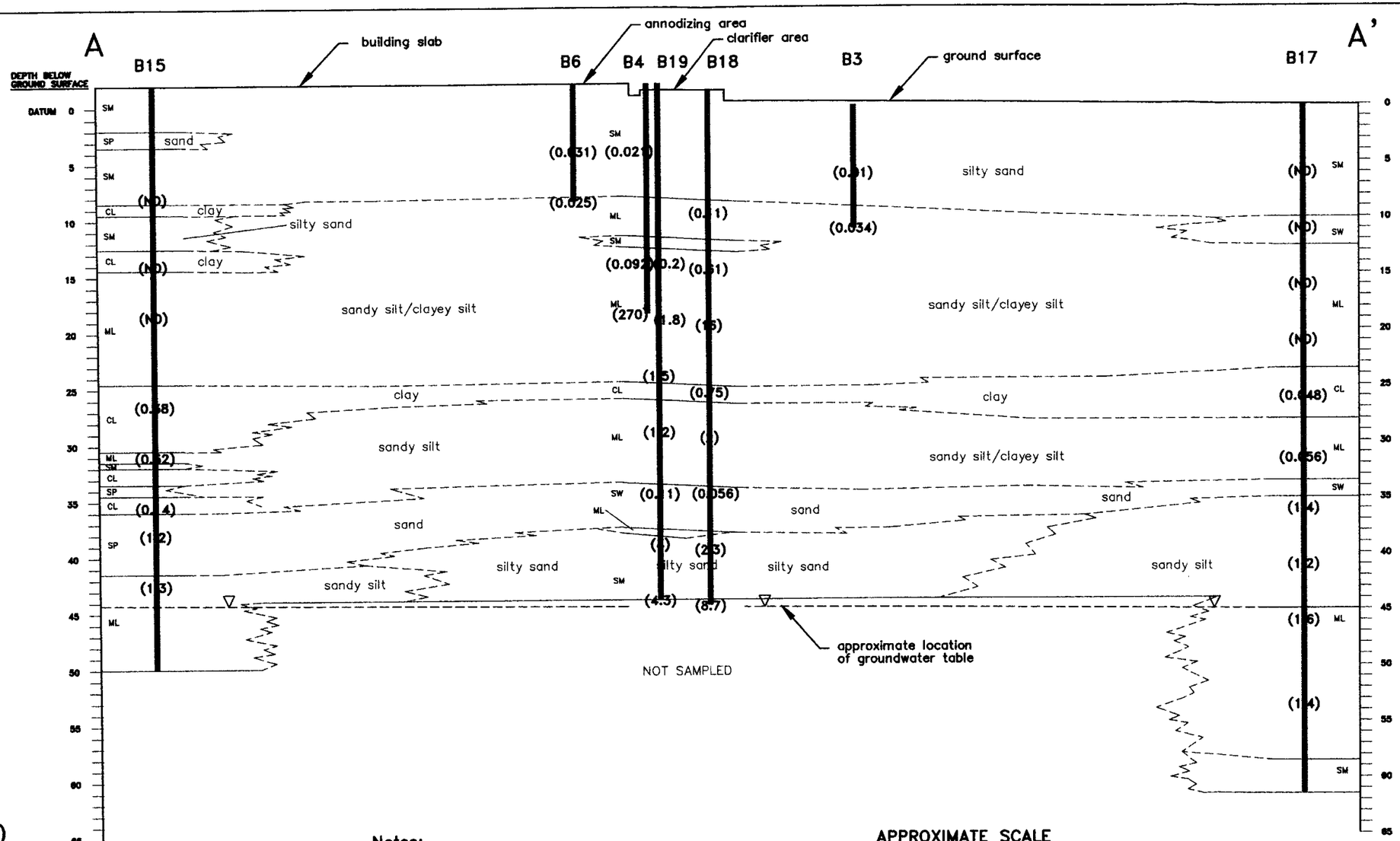
Plan Map Showing Deep Soil Cross Section Through Clarifier Area

Jervis B. Webb Co.
South Gate, CA
April 1999
EKI 961025.03

Figure 2

Notes:

1. All locations are approximate.



LEGEND

(8.7)	Concentration of TCE Detected in Sample of Soil (depth of sample indicated)
———	Lithologic Contact
- - - - - -	Inferred Lithologic Contact
- - - ▽ - - -	Approximate Location of Static Groundwater Table
silty sand	General Soil Type
ML	USCS Soil Classification

Notes:

1. All locations are approximate.
2. All concentrations shown in units of milligrams per kilogram.
3. See Table 1 for analytical results for soil samples.

APPROXIMATE SCALE

1 inch = 10 feet

Erler & Kalinowski, Inc.

Cross Section A – A' Showing Concentration of TCE in Vadose Zone Soil

Jervis B. Webb Co.
South Gate, CA
April 1999
EKI 961025.03

Figure 3

002637